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Southeastern Virtual Institute for Health Equity and Wellness (SE VIEW)

**Principal Investigator:**

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<b>14. ABSTRACT</b> <p>SE VIEW Phase I, its Co-investigators and Administrative Core has completed Year 4 (NCE) of 14 community-based research and service outreach programs. A 12-month no cost extension (NCE) has been approved for Phase I for FY15 (July 1, 2014 – June 30, 2015). The 6 additional programs under SE VIEW Phase II are nearing the end of Year 3 operation. The purpose of SE VIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel.</p> <p>The Administrative Core delivered operations, infrastructure access, strategic consultation, and quality process support to ensure proper directions, logistics, financial transactions, regulatory compliance, collaborative exchange, community-capacity building, and alignments with the goals of programmatic synergies and streamlining administrative processes and to foster strategic partnerships and programs to address the burden of health disparities.</p> <p>An evaluation planning process, inclusive of an evaluation logic model to identify SE VIEW success objectives, continues to be developed and will be completed during the FY15 NCE. SE VIEW programmatic activities, infrastructure, collaborative exchange and evaluation priorities/outcome measures will drive the Phase I NCE and the Phase II Year 3 advances and serve as foundational for SE VIEW achievement of its stated aims.</p>					
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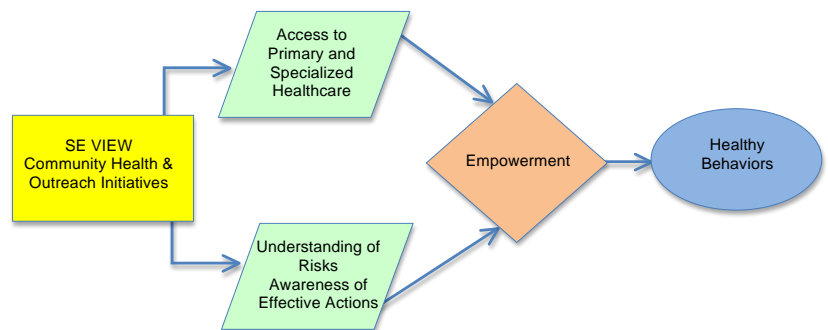
## Introduction to SE VIEW

South Carolina and other Southeastern states share a disproportionate burden of chronic diseases, including diabetes, hypertension, various cancers, metabolic syndrome and periodontal disease, which limit opportunities for individuals to enter military service. The rural nature of the region compounds issues of healthcare access and delivery. Racial, ethnic and socioeconomic disparities amplify incidence, prevalence and complications associated with chronic illness. With escalating healthcare costs impacting federal, state and employer budgets, the economic consequences of health disparities represent a key driver for effecting change, improving quality of care for many Americans and ensuring a military-ready population. The Medical University of South Carolina (MUSC) is addressing these burdens through the **Southeastern Virtual Institute for Health Equity and Wellness (SE VIEW)**. The vision of SE VIEW is to develop a nationally recognized, multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to reduce health disparities. Sabra C. Slaughter, PhD, serves as the Principal Investigator (PI) of SE VIEW and Director of the SE VIEW Administrative Core (SEVAC). Dr. Slaughter and SEVAC provide comprehensive program planning, management, coordination, integration and evaluation. Overall, SE VIEW seeks to:

- Increase awareness of the underlying causes of chronic diseases in the region.
- Develop novel methods to engage communities in the prevention and treatment of chronic diseases.
- Develop community-based services and research initiatives focused on chronic diseases and socioeconomic factors.
- Develop a range of youth-based, active and interactive, electronic modalities to increase the prevention, detection and treatment of chronic diseases.

**Figure 1. Conceptual Flow of SE VIEW's Plan to Reduce Health Disparities**

SE VIEW operates as a model of cooperation to advance collaborative community-based research and service outreach initiatives designed to improve health conditions that preclude enlistment or reduce the functional tenure of military personnel. The flow concept is illustrated in **Fig. 1**.



### **SE VIEW Goals**

- GOAL A - Integrate MUSC's model initiatives focused on health disparities into SE VIEW by identifying programmatic synergies and streamlining administrative processes.
  - Objective A1: Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance and bi-directional communications.
  - Objective A2: Establish an Evaluation & Tracking Core to monitor SE VIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRC to improve program quality.
- GOAL B - Develop strategic partnerships and programs to address the burden of health disparities.
  - Objective B1: Establish an Educational Program to reduce health disparities.
  - Objective B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities.
  - Objective B3: Establish a Community Partnerships and Outreach Program to reduce health disparities.

## Body

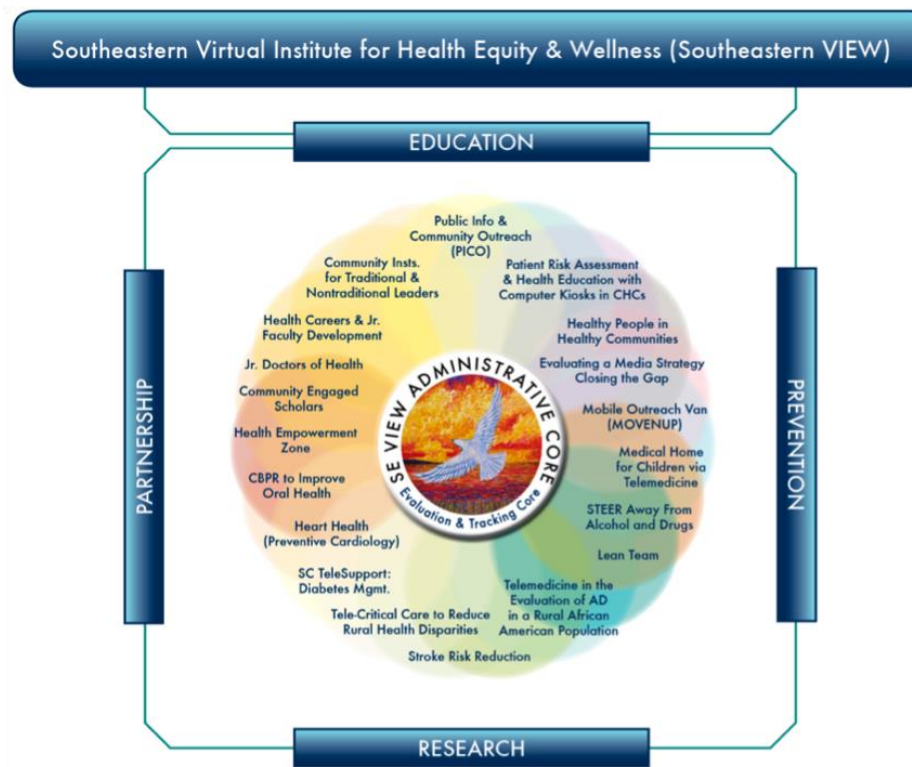
SE VIEW Phase I, its Co-investigators and Administrative Core has completed Year 4 of 14 community-based research and service outreach programs. A 12-month no cost extension (NCE) has been approved for Phase I for FY15 (July 1, 2014 – June 30, 2015). The 6 additional programs under SE VIEW Phase II are nearing the end of Year 3 operation. The purpose of SE VIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel.

The Administrative Core delivered operations, infrastructure access, strategic consultation, and quality process support to ensure proper directions, logistics, financial transactions, regulatory compliance, collaborative exchange, community-capacity building, and alignments with the goals of programmatic synergies and streamlining administrative processes and to foster strategic partnerships and programs to address the burden of health disparities.

An evaluation planning process, inclusive of an evaluation logic model to identify SE VIEW success objectives, continues to be developed and will be completed during the FY15 NCE. SE VIEW programmatic activities, infrastructure, collaborative exchange and evaluation priorities/outcome measures will drive the Phase I NCE and the Phase II Year 3 advances and serve as foundational for SE VIEW achievement of its stated aims.

SE VIEW's community-based research and service initiatives are aligned under three program categories addressing **Education (B1), Preventive Medicine, Health and Wellness (B2), and Community Partnerships and Outreach (B3)**. **Fig. 2** illustrates SE VIEW's integrative framework.

**Figure 2. SE VIEW's Integrative Framework**



**A. Goal A – integrate MUSC’s model initiatives focused on health disparities into SE VIEW by identifying programmatic synergies and streamlining administrative processes.**

**A1. Objective A1 – establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance and bi-directional communications.**

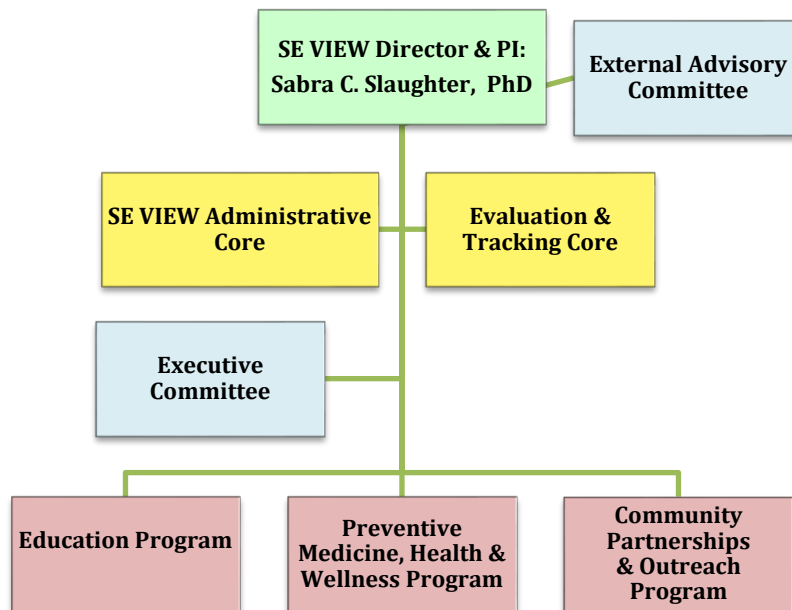
Effective leadership and management ensure that SE VIEW initiatives are fully realized. SE VIEW has strong support at the highest levels at MUSC. The Principal Investigator, Project Manager, Business Manager and Initiative Directors are highly capable individuals with the commitment, experience and authority to conduct SE VIEW.

**A1a. Southeastern VIEW Administrative Core (SEVAC) Team:**

- Jennifer Friday, PhD (Evaluation Consultant)
- Thomas Gordon, PhD (Strategic Planning Consultant)
- Sabra C. Slaughter, PhD (SE VIEW Principal Investigator)
- Tracey W. Smith, MHA (Program Manager)
- Garcia E. Williams (Marketing Consultant)
- Bart Yancey, MPA (Business Manager)

**Fig. 3** shows the SE VIEW Organizational Chart. Key elements include a well-defined academic home, clear leadership, synergistic programs and committee structures. Individual initiatives are aligned under the three program headings. SEVAC ensures that lines of communication, agendas, actions and decisions are coordinated and targeted to the project goals and objectives. SEVAC staff coordinate activities across the region, convene committee and town hall meetings, host retreats, manage program logistics, and ensure overall operational efficiency.

**Figure 3. SE VIEW Organizational Chart**



**A1b. Director and Principal Investigator**

Sabra Slaughter, PhD, SE VIEW Principal Investigator, serves as Chief of Staff in the Office of the President of MUSC. He previously directed the SC Area Health Education Consortium (AHEC). Dr. Slaughter earned a PhD in psychology from the University of Michigan. Dr. Slaughter has extensive administrative experience in health professional education, outreach and workforce diversity. He has been PI of 9 major extramural projects

related to healthcare and health disparities. As Chief of Staff, Dr. Slaughter works closely with the MUSC Board of Trustees, President, Vice Presidents, Deans and Faculty. He has the authority to make institutional decisions and commitments in developing SE VIEW policies and procedures, and is authorized to manage the adoption and implementation of best practices.

#### **A1c. Strategic Planning Consultant**

SE VIEW has engaged TAGA Consulting, a strategic planning and consulting company, to help design, facilitate and support strategic planning and ongoing quality improvement processes. TAGA's founder and principal, Thomas A. Gordon, PhD, is a licensed psychologist with degrees from Harvard University and the University of Michigan. Dr. Gordon has provided strategic consulting services to public and private institutions including Aetna Healthcare, AT&T, Johnson & Johnson, Merck Pharmaceuticals, Siemens, US Army, US Dept of Labor and US Postal Service. Responsibilities include collaborating on the design of the planning process, supporting the flow of information between SE VIEW initiative directors and key stakeholders to identify synergies and minimize barriers; developing processes to ensure effective communications, cultural sensitivity and shared focus on SE VIEW activities; and developing and guiding change management activities to support commitment to the SE VIEW plan.

#### **A1d. Committee Structure**

Internal and external committees facilitate coordination and accountability. Committee members and stakeholders will receive annual progress reports in addition to interim (quarterly and ad hoc) reports, plans and assessment materials.

**Executive Committee (EC).** The Executive Committee (EC), composed of the Initiative Directors, is SE VIEW's internal committee for communication, collaboration and management. The PI serves as chair, the Program Manager serves as Executive Secretary, and the Strategic Planning Consultant and Evaluation & Tracking Director are standing advisors. The EC holds bi-monthly 3.5-hr meetings (**Appendices 1-4**). Each meeting includes 2-3 scheduled 'stand-up' 15-min program reports on recent progress, challenges, alternatives, results and future directions as well as 3-min 'roundtable' updates from other program leaders. The EC's role is to ensure integration among initiatives, advise on issues common to all SE VIEW initiatives such as resource utilization, and see that SE VIEW milestones are met in a timely manner. The members are responsible for evaluation and tracking with direct input from the Evaluation & Tracking Director.

**External Advisory Committee (EAC).** The SE VIEW External Advisory Committee (EAC) is made up of one nationally recognized expert in health disparities (W. Timothy Garvey, MD), three civic/community leaders in SC (Vince Ford, Allen Parrott, D.Min, and Rita Scott), and one TATRC member (Wilbur Malloy, MA, MLS – Ex Officio Member). The purpose of the EAC is to review SE VIEW's impact, integration and productivity based on measurable progress toward goals and to advise SE VIEW leadership concerning scientific direction and results. They will review the performance of the PI and make recommendations for enhancing impact and effectiveness. EAC Community members, in tandem with SE VIEW Initiative Directors, will help create a plan for community education, outreach and advocacy that is responsive to the diversity, needs and interests of the communities served by SE VIEW. The EAC met during the October 2012 SE VIEW Annual Reception and Retreat that took place on October 17-18, 2012. The following lists the SE VIEW EAC member biographies:



#### **Vince Ford**

Mr. Vince Ford is Senior Vice President of Community Health at Palmetto Health in Columbia, SC. Mr. Ford is responsible for Palmetto Health's \$17 million tithe to the community for health issues. Mr. Ford had been working under the auspices of Richland Memorial Hospital since April 21, 1997. Prior to that, he was the Executive Director of the Boys and Girls Clubs of the Midlands. Mr. Ford is active in the community and has served as Director of the Sickle Cell Foundation



and as Chairman of Richland School District One School Board. The South Carolina School Boards Association named him Outstanding School Board Member for the Sixth Congressional District and All-State School Board Member. Mr. Ford also serves on the Benedict College Board and the University of South Carolina African American Community Advisory Board. Mr. Ford earned his Bachelor of Science in Sociology from Benedict College and Master of Science in Individual and Family Development from S.C. State University.



### **W. Timothy Garvey, MD**

Dr. W. Timothy Garvey is Professor of Medicine and Chair of the Department of Nutrition Sciences at the University of Alabama at Birmingham. He obtained his MD degree, cum laude, from St. Louis University in 1978, and completed residency training in Internal Medicine at Barnes Hospital, Washington University, in 1981. He then was a clinical fellow in Endocrinology and Metabolism at the University of Colorado Health Sciences Center and University of California, San Diego School of Medicine. He subsequently held faculty posts at the University of California, School of Medicine (Assistant Professor), Indiana University School of Medicine (Associate and full Professor), and from 1994 to 2003 was the Director of the Division of Endocrinology, Diabetes, and Medical Genetics at the Medical University of South Carolina. Dr. Garvey moved to UAB on June 1, 2004.

Dr. Garvey has achieved international recognition for his research in the metabolic, molecular, and genetic pathogenesis of insulin resistance, Type 2 Diabetes, and obesity. His studies have involved the cellular and molecular biology of cell and animal models, metabolic investigations of human subjects on metabolic research wards, and the genetic basis of diseases in Gullah-speaking African Americans, Pima Indians, and national cohorts of diabetes patients. Dr. Garvey has directed an independent laboratory since 1987 supported by the National Institutes of Health (NIDDK, NHLBI), the Department of Veterans Affairs, the AHA, JDFI, the ADA, and other agencies. Dr. Garvey also has a track record of community based research and outreach in the context of two initiatives, Project Sugar (a genetics study among Gullah-speaking African Americans) and MUSC/HBCU Partners in Wellness (a program in community health at 6 historically black colleges and universities in SC intended to challenge minority students towards careers in the health professions).

He has provided service as a member of national research review committees for the Juvenile Diabetes Research Foundation, the American Diabetes Association, the VA Merit Review Program, and the National Institutes of Health. He was a standing member of the Metabolism Study Section at NIH from 1998-2002, and has chaired several ad hoc NIH study sections. Dr. Garvey currently serves on the editorial boards of Diabetes, and has previously served in this capacity for the Journal of Clinical Endocrinology and Metabolism and Diabetes Reviews. He is a member of the American Society for Clinical Investigation, the Association of American Physicians, the Endocrine Society, and the American Diabetes Association, and the North American Association for the Study of Obesity.



### **Allen W. Parrott, D.Min**

Dr. Allen W. Parrott is the Presiding Elder of the Kingstree District in the Seventh Episcopal District of the African Methodist Episcopal Church. He has been involved in health ministry and the role of the church in addressing health needs of the people. Dr. Parrott has also developed workshops and has written several publications focusing on lay ministry and the class leader in Methodism. Among them are: 1) Class Leaders Training Workshop, a six-hour intensive training that focuses on the biblical, historical and theological understanding of the class leader ministry, 2) Empowering The Laity for Effective Ministry and Service: A Message And A Ministry, and 3) Empowering Class Leaders for Effective Ministry. Dr. Parrott is a 1971 graduate of Mayo High School, Darlington, South Carolina. He graduated from Allen University (Columbia, SC) in 1975 with a Bachelor of Arts degree. He earned a Masters of



Divinity degree from Turner Theological Seminary in Atlanta, GA (1979), and a Doctor of Ministry degree from Erskine Theological Seminary (Due West, SC). Dr. Parrott is married to Barbara Ann Canty Parrott of Sumter, South Carolina. They are the proud parents of three children, Kevin Eugene (Erica), Korey Allen (Autumn), Kimberly Rochelle and two grandchildren, Kendall and Jayden.



#### **Rita L. Scott**

Mrs. Rita L. Scott is the Vice President and General Manager of WCSC-TV5. This station is the CBS affiliate in Charleston and the number one station in ratings and revenue. WCSC is also the number one web/mobile platform in the Lowcountry. In 2010, the station launched a second digital channel “Live 5 Plus” and in September 2011 launched “Bounce” the first over the air network targeting the African American community on its third digital channel.

Mrs. Scott is active in the community, serving on numerous Boards to include Spoleto USA, International African American Museum (Vice Chair), Trident United Way, Regional CEO Council, and is also a member of the Nielsen Alliance. In 1999, Mayor Riley and the City of Charleston honored her as the first African American woman to become General Manager of an affiliate television station, naming October 21 in her honor.

Mrs. Scott was born in High Point, North Carolina. Her career in the broadcasting field began in sales with WGHP Television, Greensboro/High Point, North Carolina. She has held numerous positions in television sales including positions with WJW in Cleveland, Ohio and Cap Cities/ABC National Sales in Chicago, Illinois before eventually moving back to the Carolinas as Local & National Sales Manager at WBTV in Charlotte. Mrs. Scott attended High Point College and Appalachian State University with studies in Speech Communications with a Broadcast Concentration and a Business Minor.



#### **Wilbur W. Malloy, MA, MLS (ASCP) SBB**

Mr. Malloy is a retired Army Officer (Lieutenant Colonel, Medical Service Corp) and during his 23 years of military service directed numerous clinical laboratories and blood banking facilities. He has received numerous awards and accolades to include the Legion of Merit. Wilbur is a disabled Vietnam-era veteran and served in Operation Desert Shield/Desert Storm in Saudi Arabia. During his last military assignment, he served as the Laboratory Manager for the Department of Pathology and Area Laboratory Services at the Walter Reed Army Medical Center, Washington DC. Currently, Wilbur is the Portfolio Director for Blood Products and Blood Safety and serves as a Program Director for the Telemedicine and Advanced Technology Research Center (TATRC) at the United States Army Medical Research and Materiel Command (MRMC), Fort Detrick, MD. TATRC

manages approximately 500 million dollars in medical research for the Department of Defense and Wilbur has utilized his 30 plus years of experience in healthcare and military medicine to identify, explore and demonstrate key technologies and biomedical principles required to overcome technology barriers that are both medically and militarily unique. Wilbur has contracting officer representative responsibilities for projects in the areas of computational biology, biomonitoring, blood products and safety, regenerative medicine, nano-medicine and biomaterials, medical logistics, infectious disease, wellness and training, and genomics and proteomics. Mr. Malloy has completed graduate studies at the University of Maryland and is a graduate of Pepperdine University (Malibu, CA) with a Master’s Degree in Healthcare/Research Management and North Carolina A&T State University (Greensboro, NC) with a Bachelor of Science degree in Professional Biology. He is a

registered Medical Laboratory Scientist/Medical Technologist and Specialist in Blood Banking and Immunohematology.

**A2. Objective A2 – Establish an Evaluation & Tracking Core to monitor SE VIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRC to improve program quality.**

An evaluation planning process, inclusive of an evaluation logic model to identify SE VIEW success objectives, continues to be developed and will be completed during the FY15 NCE. SEVAC continues to engaged Jennifer C. Friday, PhD, of The Friday Consulting Group, to provide expertise and guidance in designing and implementing the Evaluation Plan. Dr. Friday is a behavioral scientist with >25 years' experience in researching and evaluating health and education programs. She received her BS in biology from Millikin University, and master's and doctoral degrees in psychology from the University of Tennessee, Knoxville. For 13 years she worked at the CDC in programs dealing with HIV/AIDS and violence prevention. Dr. Friday's policy development skills were honed at the Joint Center for Political and Economic Studies in Washington, DC. She has facilitated workshops and training programs, devise strategic plans, and guided program planning and evaluation for government agencies, community-based organizations, and for-profit and non-profit entities, including Community Health Outreach Works, Inc., Alliance for Christian Media, Oakhurst Community Health Center, and the Rosalynn Carter Institute for Human Development.

The evaluation consultant will: (a) develop the logic model; (b) identify key success indicators and measures for each initiative; (c) develop the evaluation plan and framework for the overall SE VIEW project; (d) keep performance indicators and data collection focused on measures of success; (e) demonstrate the value of increased effectiveness and efficiency; (f) utilize quality improvement methods to achieve evaluation aims; and (g) work with participants on how to utilize evaluation data. The SE VIEW Evaluation Plan includes process, outcome and impact evaluation. The impact evaluation will be designed now as part of the Evaluation Plan, and implemented at a future date when SE VIEW is completed and/or integrated into the community.

***Process Evaluation.*** The process evaluation will document and analyze implementation of the project. This includes identification and integration of the individual initiatives into the overall SE VIEW project. Data collection methods will include document reviews such as quarterly reports, minutes from bi-monthly project meetings, key informant interviews and observations. Data and information from the process evaluation component will be used to provide feedback to improve services on an ongoing basis.

***Outcome Evaluation.*** The outcome evaluation of the project documents whether the project goals and objectives were met. The outcome evaluation will address the degree to which the project was successful in achieving measurable, positive results in the key outcome goals of the project. Specifically, the outcome evaluation is designed to document the project's degree of success in conducting the outcome evaluation. Both quantitative and qualitative data will be collected and analyzed. The outcomes for the evaluation are divided into short-, medium-, and long-term objectives. The short-term objectives focus on increasing the knowledge base of the participants, the medium term objectives focus more on behavior change while the long-term objectives are focused on the overall outcomes for the program.

***Impact Evaluation.*** The impact evaluation component will focus on the extent to which the SE-VIEW activities made a difference in the target community. This will include changes in community health status, improved access to care, and general improvement in health delivery systems. The impact evaluation will be designed as part of the evaluation plan, but it is not expected that this will be a part of this current project. Impact evaluations will be implemented at a future date once the project is completed and has had some time to become integrated into the community.

### **Data Plan**

The evaluation will utilize both qualitative and quantitative data. Qualitative data will include document reviews, individual interviews, focus groups and surveys. Quantitative data will be collected through

implementation activities, participation rates, self-report questionnaires, curriculum assessments, and other program activities.

Data will be gathered utilizing a variety of methods and modalities. Utilizing multiple data sources is critical because of the variety of activities that each of the projects will be engaging in. This will help to facilitate gathering a variety of information that will be helpful in understanding how the program is being implemented and the progress towards achieving the program outcomes.

Baseline data will be collected by each of the SE-VIEW projects at the outset. These baseline data will be summarize for use by SE-VIEW as the starting point for the overall evaluation. Process evaluation data will be ongoing and additional data to support the process evaluation will be collect quarterly or as needed for the established reporting system. Outcome data will be collected once a year during the project period.

In addition to the data collected by the individual projects, the overall SE-VIEW project will also collect data to supplement the information received. Data collection methods will include the following:

- **Case Studies**

Case studies of SE-VIEW projects may be conducted to take a thorough look at the steps needed to develop, implement, and evaluate the project. This would provide an in-depth description about what is needed for effective service delivery and achievement of outcomes.

- **Document Reviews**

Analysis of documents that include but are not limited to program records, research reports, census data, health records, as well as newspaper and magazine articles. Paper and computerized archival data will be collected and analyzed, attendance at all program functions will be recorded and monitored, and site visits by members of the evaluation team will be used to provide feedback on the fidelity of implementation

- **Focus Groups**

Focus Groups with subsets of the communities beings served, participants, partners and others will be conducted to gather in-depth information related to the activities of SE-VIEW.

- **Interviews**

Data will be collected with in-person or telephone interviews and with targeted focus groups. This will provide qualitative data that will be incorporated into both the process and outcome components of the evaluation.

- **Medical Assessments and Tests**

An assortment of medical assessments and diagnostic tests will be administered by the SE-VIEW projects. These include, but are not limited to blood pressure readings, hemoglobin A1C, cultures.

- **Observations**

Observe situations, behaviors and activities in a formalized and systematic way, usually using observational checklists and trained observers.

- **Surveys and Written Data Collection Instruments**

Data will be collected through the use surveys that will be collected in a variety of ways including in-person, online, phone and mail. These surveys may be developed for the individual programs or may be existing standardize measures. We will also utilize program logs and other data collection methods use as part of the regular program activities. In addition, evaluation staff will participate in project meetings and other program activities where their presence will not interfere with program delivery or data collection. Paper and computerized archival data will be collected and analyzed, attendance at all program functions will be recorded and monitored, and site visits the evaluation team will be used to provide feedback on the fidelity of implementation.

### **Data Analysis**

The mixed model nature of the data to be collected will require a variety of data analysis methods. Data will be analyzed using standard statistical packages and will include descriptive and inferential statistics. The data analysis will be developed as the final program plans are approved and implemented.

### **Institutional Review Board Submission Plan**

Phase I projects needing IRB approvals were submitted to local IRB. Once they received approval, they then submitted to TATRC for its approval. The process varied in length for the different projects. As part of the process evaluation, a survey is being developed to learn more about the approval process and to determine ways to streamline the process. This information will be used to help guide the Phase II projects.

### **Evaluation Logic Model**

The following logic model provides the framework for the SE-VIEW Evaluation Plan. The vision and goals of SE-VIEW have been established. In the model, we identify each of the projects and link them to the specific goals. Two separate evaluation plans have been developed for Phase I and Phase II. It is anticipated that once all the projects have received IRB approvals and are in their implementation phase that the Evaluation Plans will be combined.

The inputs necessary for SE-VIEW to be successful have been identified. There are several SE-VIEW activities that are listed. They include instructional and research activities, outreach and service activities, health care delivery and prevention services, as well as policy activities. The communities that are targeted are the I-95 Corridor and the Coastal Carolina communities, with some specific focuses on Johns Island, the Sea Island Gullah and Williamsburg County. These communities represent all the racial and ethnic populations and socio-demographic groups that are affected by health disparities.

The broad range of outcomes has been identified. These will become more specific and targeted as the individual projects begin implementation of their activities. The outcomes that directly relate to SE-VIEW are incorporated into the overall evaluation plan. Similarly, the data sources that have been identified are drawn from the individual projects.

The general evaluation questions are stated. As the projects get off the ground and begin the full implementation, it is anticipated that there would be additional evaluation questions that will need to be asked. Additional indicators will also be identified as we progress through the implementation of the project, and as the program activities become better defined. **Table 1** illustrates the SE VIEW Evaluation Logic Model.

**Table 1. SE VIEW Evaluation Logic Model (Phase I)**

#### **SE VIEW VISION**

To develop a nationally recognized multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to eliminate health disparities.

#### **SE VIEW GOALS & OBJECTIVES**

**Goal A: Integrate MUSC's model initiatives focused on health disparities into the SE VIEW by identifying programmatic synergies and streamlining administrative processes.**

##### **Objectives:**

**A1:** Establish a single Administrative and Coordinating Core to oversee project logistics, financial transactions, regulatory compliance, and bi-directional communications.

**A2:** Establish an Evaluation and Tracking Core to monitor SE VIEW activities and provide timely feedback to the Principal Investigator, Initiative Directors and TATRAC to improve program quality.

**Goal B: Develop strategic partnerships and programs to address the burden of health disparities.**

**Objectives:**

**B1:** Establish an Educational Program to reduce health disparities: Program initiatives will focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases, and address educational deficits related to chronic diseases. SE VIEW Projects linked to this goal:

- MUSC Public Information and Community Outreach Initiative (PICO)
- Community Institutes for Traditional and Nontraditional Leaders

**B2:** Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities: Program initiatives will expand proven strategies and/or develop novel methods to engage communities, and remove barriers to effective healthcare. SE VIEW Projects linked to this goal:

- Stroke Risk Reduction Initiative (SRRI)
- Heart Health Initiative
- SC TeleSupport: Diabetes Management Initiative
- Tele-Critical Care Program to Reduce Health Disparities (CREST)
- Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population

**B3:** Establish a Community Partnerships and Outreach Program to reduce health disparities: These activities will provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service, and disseminate evidence-based research findings. SE VIEW Projects linked to this goal:

- Lean Team Initiative
- Community Engaged Scholars Initiative (CES)
- The Health Empowerment Zone (HEZ)
- Healthy People in Healthy Communities
- Mobile Outreach Van Educational and Navigational Health Services for Underserved Populations Initiative (MOVENUP)

**INPUTS**

Churches/Faith-Based Organizations, Clinics/Health Centers, Emergency Dept., Federal Clinics, Funding Support, Government Agencies, Grocery Stores, Healthcare System, Hospitals Materials (Training Tools, Evaluation), MUSC, Health Clubs, PTO, Restaurants, Schools, SE View Consultants, SE View Projects, staff, tools and worksites

**OUTPUTS****Activity**

Community Engagement, Consultation, Cultural Exchange, Healthcare, Health Promotion, Health Career Academy, Instructional, Mentoring, Networking, Outreach, Policy, Prevention, Research, Screening, Service, Training, Web and Internet, Wellness Council

**Target Population**

Communities, I-95 Corridor, Coastal Carolina, Groups: African Americans, Community Leaders, Elderly, Obese Children, Rural Population, School Aged Children, Teenagers

**OUTCOMES****Short Term**

Increase knowledge base; increase skills and awareness

**Medium Term**

Utilization of knowledge base

**Long Term**

Increase positive behaviors; decrease in negative behaviors

**DATA****Data Sources**

Activity Logs, Attendance Logs, Behavioral Risk Factor Surveillance System, Census Data, Clinic Data, Community Members, Community Partners, Comorbidity (DRGs & ICD-9), Council of Governments, De-Identified Ref. Lists, Follow-Up Records, Federally Qualified Health Centers Patient Electronic Care Sys. (FQHC - PECS), Partners, Hospital Discharge Data, Institutional Data, Land Developers, Medicare/Medicaid Data, Meeting Agendas, Meeting Minutes, MUSC Faculty, MUSC Students, Neighborhood Assoc., Office Of Vital Records Participant Logs, Program Data, Program Faculty, Program Participants, Public Access Info, Registration Forms, SC Dept of Health, SC Off. Of Res. & Statistics, School Attendance Zones, School Data, Secondary Sources, Standardized Media Contact Form, Store Audit Survey, Structured Activity Form, Telephone Logs, Transportation Authority, Web "Hits", Working Group Reports, Youth Risk Behavioral Surveillance System

**Data Collection Methods**

Case Studies, CDC Change Questions, Clinical Screenings, Current Resource List, Focus Groups, Interviews, Key Informant

Interviews, Medical Assessments/Tests, Observation, Organizational Assessments, School Cafeteria Audits, Screening Tools, Service Delivery, Surveys –General, Tests/Assessments, Walkability Survey, Windshield Survey

#### **Data Collection Measures**

Clinical Dementia Rating Scale, Clock Drawing Test, Continuing Educ. Credits, Depression (PHQ-9), Diabetes Fatalism Scale, Diabetes Knowledge Questionnaire, Diagnostic Evaluations, Essential Medical Tests/Screens (Hemoglobin A1C; Blood Pressure; Cultures; Body Mass Index; Lipids Profile), Geriatric Depression Scale, Health Literacy, Logical Memory IIA, Medical Comorbidity (Charlson Index), Mini Mental State Exam, Modified Hachinski Ischemia Scale, Morisky Medication, Adherence Scale Patient Demographics Survey, Perceived Diabetes Self Efficacy Scale, Quality of Life Measures, Resource Use, Social Support, Standard Clinical Assessment, Summary of Diabetes, Self-Care Activities Scale, Supportive Care Measures

### **EVALUATION QUESTIONS**

#### **Process Evaluation Questions**

##### Inputs

How many resources (human and financial) are needed to achieve goals?

Who will implement the program?

Who provided program services?

What are the characteristics of coalitions, collaborations, partnerships, etc.?

Are the resources adequate?

##### Activities

How many programs/sessions/activities delivered?

What services/activities were provided?

Was the curriculum delivered as intended?

Are implementation objectives being attained?

What was the quality of the delivery (consistency and fidelity)?

##### Target Population

How many participants are in the program?

How many participants are in each session/activity?

What is the participant's level of satisfaction with the program/activity?

What were the facilitators to implementation?

#### **Outcome Evaluation Questions**

##### Increase Knowledge

Did knowledge increase?

##### Change Behavior

Did we have behavioral changes?

##### Achieve Outcomes

Was programmatic integration achieved?

Were strategic partnerships established?

Are outcome objectives being achieved?

Did the projects/interventions improve access to services?

Did the projects/interventions improve the quality of services provided?

#### **Impact Evaluation Questions**

Which aspect of the program contributed more to the outcomes?

Are there unintended outcomes?

Are participants satisfied with program implementation and outcomes?

What changes have participants made as a result of the program?

Who does the program affect directly and indirectly?

Who benefits from this program and how?

Are the program's results worth the resources?

### **INDICATORS**

Levels of participation, levels of service and activity, levels of support, establishment of advisory groups, listing of community programs and services, evidence of partnership activities, achievement of objectives, changes in knowledge/behavior, changes in



vending machine choices, changes in physical activity, improved nutrition, increase in DASH-type meals, research productivity, reduction in health indicators, increased access to healthcare services

## **B. Goal B - Develop strategic partnerships and initiatives to address the burden of health disparities.**

MUSC has substantial strengths serving the goals of education, prevention, community partnership and research to eliminate health disparities. These include a dynamic and diverse faculty, outstanding facilities, a strong and diverse student body, and many existing community ties. Building on these strengths, SE VIEW has identified and integrated robust programs focused on the elimination of health disparities to ensure a military ready workforce, retention of active duty personnel, and continued health in VA health services.

As shown in **Fig 2.**, SE VIEW's community-based research and service initiatives are aligned under three program categories addressing **Education (B1)**, **Preventive Medicine, Health and Wellness (B2)**, and **Community Partnerships and Outreach (B3)**. The alignment of initiatives with these objectives is based on primary thrust and specific goals of each project. However, all the programs use resources and tools that integrate educational, disease prevention/health promotion, and community engagement principles.

To illustrate SE VIEW's synergies, thematic interactions and potential for administrative efficiencies, **Tables 2-4** chart all the SE VIEW initiatives as programmatic clusters with respect to three integrative concepts: **Stages of Life, Community Engagement and Empowerment Strategies, and Disease Targets.**

**Table 2. SE VIEW's Comprehensive Plan to Reduce Health Disparities across the Lifespan**

*italics = funded in SE VIEW Phase I*

**boldface = new/funded in Phase II**

Objectives/Approaches	Stages of Life		
	Children	Adolescents	Adults
<b>B1 EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES</b>			
<b>B1a Public Information and Community Outreach (PICO)</b>			
<i>B1b Community Institutes for Traditional and Nontraditional Leaders</i>			
<i>B1c Health Careers Academy &amp; Junior Faculty Development</i>			
<b>B1d Junior Doctors of Health</b>			
<b>B2 PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS</b>			
<i>B2a Stroke Risk Reduction Initiative</i>			
<i>B2b Heart Health Initiative (Preventive Cardiology Research)</i>			
<b>B2c SC TeleSupport (Diabetes Management Initiative)</b>			
<i>B2d Tele-Critical Care to Reduce Rural Health Disparities</i>			
<b>B2f STEER Away from Alcohol and Drugs</b>			
<b>B2g Providing a Medical Home for Underserved Children via Telemedicine</b>			
<b>B3. COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS</b>			
<i>B3a Lean Team Initiative</i>			
<i>B3b Community Engaged Scholars – Collaborations in CBPR</i>			
<i>B3c Mobile Outreach Van (MOVENUP) Initiative</i>			
<i>B3d Health Empowerment Zone</i>			
<b>B3e Healthy People in Healthy Communities</b>			
<i>B3f Telemedicine in the Eval. of AD in a Rural, African American Population</i>			
<b>B3g Evaluating a Media Strategy – Closing the Gap</b>			
<b>B3h CBPR to Improve Oral Health Disparities</b>			
<b>B3i Patient Risk Assessment &amp; Health Ed. w/ Computer Kiosks in CHCs</b>			

Objectives/Approaches	Strategies				
	CBPR	Health IT	Health Literacy	Tele-medicine	Work-force dev.
<b>B1 EDUCATIONAL PROGRAMS TO REDUCE HEALTH DISPARITIES</b>					
<b>B1a Public Information and Community Outreach (PICO)</b>					
<b>B1b Community Inst for Traditional and Nontraditional Leaders</b>					
<b>B1c Health Careers Academy &amp; Junior Faculty Development</b>					
<b>B1d Junior Doctors of Health</b>					
<b>B2 PREVENTIVE MEDICINE, HEALTH AND WELLNESS PROGRAMS</b>					
<b>B2a Stroke Risk Reduction Initiative</b>					
<b>B2b Heart Health Initiative (Preventive Cardiology Research)</b>					
<b>B2c SC TeleSupport (Diabetes Management Initiative)</b>					
<b>B2d Tele-Critical Care to Reduce Rural Health Disparities</b>					
<b>B2f STEER Away from Alcohol and Drugs</b>					
<b>B2g Providing a Medical Home for Underserved Children</b>					
<b>B3. COMMUNITY PARTNERSHIPS AND OUTREACH PROGRAMS</b>					
<b>B3a Lean Team Initiative</b>					
<b>B3b Community Engaged Scholars – Collaborations in CBPR</b>					
<b>B3c Mobile Outreach Van (MOVENUP) Initiative</b>					
<b>B3d Health Empowerment Zone</b>					
<b>B3e Healthy People in Healthy Communities</b>					
<b>B3f Telemed. in the Eval. of AD in a Rural, African American Pop.</b>					
<b>B3g Evaluating a Media Strategy – Closing the Gap</b>					
<b>B3h CBPR to Improve Oral Health Disparities</b>					
<b>B3i Patient Risk Assessment &amp; Health Ed. w/ Computer Kiosks</b>					

**TABLE 4. SE VIEW'S Strategic Targets for Reducing Health Disparities**

[illegible]

## **B1. Objective B1: Establish an Educational Program to reduce health disparities.**

Program initiatives focus on increasing awareness of health issues in communities that bear a disproportionate burden of chronic diseases and address educational deficits related to chronic diseases. The Educational Program includes three initiatives aimed at target audiences at local and national levels and age groups across the lifespan.

### **B1a. MUSC Public Information and Community Outreach (PICO) Initiative**

**Director:** David Rivers, MA, Assistant Professor, Dept of Library Science and Informatics

**Goals:** Heighten public awareness of health issues; provide prevention and health screening opportunities; promote awareness of and access to affordable and culturally competent care.

**Distinguishing Characteristics:** Recognition of the unique relationship between human health, environmental quality, environmental justice and economic development in determining quality of life.

**Seventh Annual National Conference on Health Disparities.** November 13 – 16, 2032, St. Thomas, U.S. Virgin Islands. This conference<sup>1</sup> continued to address the question: How do we augment our nation's current "sick-care" medical model with a comprehensive "well-care" approach that sustains and strengthens communities? The focus was on issues regarding non-medical determinants of health, including education levels, health literacy, poverty, public safety, community design, access to care, environmental quality, environmental justice, and personal, government and corporate responsibility. Conference presenters and participants discussed ways to incorporate these issues into policies and programs that target health disparities, recognize and address the impact of social determinants and personal responsibility on human health.

***Our Health Series Made-For-Television Dialogues.*** The Our Health Series brings together a skilled moderator, expert panelists and active and informed studio audiences to address specific diseases and conditions that contribute to health disparities. While issues on the table are national in scope, the goal is to deliver a program that brings these issues home to South Carolinians in a way that suggests and encourages positive actions and responses. On May 30, 2013, PICO produced the *Our Health Series* dialogue entitled, *Our Nation's Health: A Focus on Social Determinants*<sup>2</sup>, at the ETV studios in Columbia, SC. The program examined the impact of social determinants (poverty, race, environment, education, access to care, housing and public safety) on Americans' health and our nation's healthcare system. CNN Chief Nation Correspondent John King served as the moderator. The panel included experts in diverse fields related to the topic.

**Hands on Health-SC.** Hands on Health-SC<sup>3</sup> is a consumer health information website that pays special attention to health issues of particular importance to SC citizens and communities. It is a gateway to reputable Internet health sites with additional content in both English and Spanish written for readers with low-literacy skills. Features of the site include plain language articles on the diseases and health issues that are South Carolina's Biggest Health Problems, "Go Local-SC" which is Hands on Health's statewide directory of health services, many of them free or low in cost.

**Health Literacy Workshops/Trainings.** Conducted by the Hands on Health-SC staff using training and skill-building materials that have been tested with diverse populations, including high school students, seniors, service professionals, and ethnic groups.

### **B1b. Community Institutes for Traditional and Nontraditional Leaders**

**Director:** David Rivers, MA, Assistant Professor, Dept of Library Science and Informatics

**Goal:** Help communities and constituencies build capacity to identify, access and develop leadership resources.

**Distinguishing Characteristics:** Integration of health disparities research and public policy directives through linkage of scientific, political and local communities; incorporation/cultivation of nontraditional (artists, musicians, athletes) as well as traditional leaders (elected officials, preachers, lawyers etc.).

**Community Leadership Institutes.** Community Leaders Institutes (CLIs)<sup>4</sup> are two-day workshops that focus on matters such as the role of government, youth issues, health disparities, economic development, transportation and housing challenges – all through the linkage of scientific, political and local communities. During FY14, PICO and SE VIEW conducted a total of two CLIs in the following locations: Savannah, GA and Montgomery, AL.

**Technical Assistance Workshops.** Technical Assistance Workshops (TAWs) are one-day grant writing workshops that teach the community how to locate grant-funding opportunities and prepare and manage a successful grant application. During FY14 PICO conducted a TAW in Columbia, SC.

#### **B1c. Health Careers Academy and Junior Faculty Development**

**Director:** Sabra C. Slaughter, PhD, Chief of Staff, Office of the President; Associate Professor

**Goal:** Increase diversity in the healthcare workforce and the health disparities research arena.

**Distinguishing Characteristics:** Health Careers Academy: One-on-one mentoring, parental involvement, ongoing academic advisement and career tracking. Junior Faculty: Scientific and career mentoring, time management assistance, protected time for research, grantsmanship mentoring, and regulatory training and assistance.

#### **Health Careers Academy**

This program is a 1-week summer program designed to increase the acceptance, retention, and graduation rates of under-represented minority and disadvantaged students to nursing, dental, medicine and pharmacy training programs in South Carolina.<sup>5</sup> The Academy is conducted in collaboration with the South Carolina AHEC, MUSC College of Nursing, College of Dental Medicine, College of Medicine, College of Health Professions, Library and the South Carolina College of Pharmacy.

The 2013 Academy was held June 2 - 7 on the campus of the Medical University of South Carolina and serviced 21 participants representing 12 of the state's counties: Berkley, Charleston, Dorchester, Greenville, Greenwood, Horry, Lexington, Orangeburg, Richland, Spartanburg, Sumter, and York. The Academy agenda was designed to meet the academic, professional, and personal needs of the participants to support matriculation to health professions education. Other details of the 2013 Academy include:

- Student Areas of Interest
  - Dental Medicine: 3
  - Medicine: 13
  - Occupational Therapy: 2
  - Pharmacy: 3
- Program Agenda
  - Collaborative Learning – IP Case Study
  - Didactic Education
    - Childhood Obesity
    - Collaborative Health Promotion
  - Program Agenda Topics
    - Financing Health Professions Education
    - Professionalism
    - Team Building
    - Public Speaking & Tips for Presenting
    - Presentation Development
    - Career Exploration
    - Research
      - SC's Population Health Data
      - Research Resources & Techniques

- Careers in Research
- Gross Anatomy Lecture & Lab
- Student Success Workshops & Activities
  - Professional Networking
  - Individual Academic Advising
  - College-specific Admissions
  - Creating Your Personal Statement
  - Peer Mentoring by MUSC Students
- Experiential Learning
  - Career-specific Clinical Simulations
  - Clinical Observation
  - Service Learning Projects
    - MUSC Urban Garden
    - MUSC Gives Back/Hollings Cancer Center Sock Project
    - MUSC Gives Back/ Hollings Cancer Center Operation Heart
- Professional Networking
- Team Building
  - IP Team Challenge Poster Presentations

The Academy participants will continue their college careers in the fall of 2013. They have enrolled in the following colleges and universities: Clemson University, Coastal Carolina University, College of Charleston, Duke University (NC), Francis Marion University, University of SC, USC – Upstate, Webster University, and Wofford College.

### **Junior Faculty Development**

SE VIEW extends training and professional development programs aimed at junior faculty development (JFD). The SE VIEW JFD program provides protected research time for health disparities research and regulatory training. The purpose is for the participants (Debbie C. Bryant, RN, MSN, DNP and Ida J. Spruill, RN, MSN, PhD) to gain practical experience with:

- Conducting community-base health promotion intervention research and practice with individuals in South Carolina
- Identifying and facilitating skills and resources to enhance intrinsic community capacity
- Training with intervention delivery and evaluation
- Regulatory training and maintaining quality control of study/outreach implementation
- Ensuring scientific and ethical integrity of study/service
- Reporting results of study/service outcomes.

Drs. Bryant and Spruill have made significant progress since the inception of the program. Please see the section entitled “Key Research Accomplishments” for more details.

## **B2. Objective B2: Establish a Preventive Medicine, Health and Wellness Program to reduce health disparities.**

Program initiatives will expand proven strategies and/or develop novel methods to engage communities and remove barriers to effective healthcare. This objective includes four initiatives.

## B2a. Stroke and Stroke Risk Reduction Initiative (SSRI)

**Director:** Robert Adams, MD, Professor of Neurology; Director of the South Carolina Center of Economic Excellence; Director of the MUSC Stroke Center

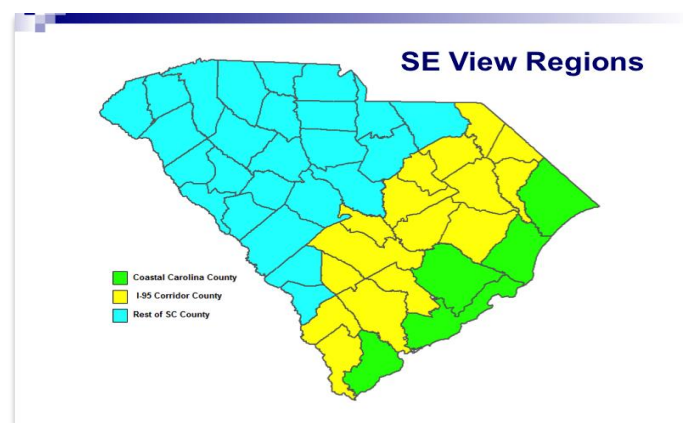
**Goals:** Extend access to expert stroke care to SE VIEW regions, which have very high stroke incidence, morbidity and mortality rates; develop stroke-related CME/CEU-certified education for healthcare providers.

**Distinguishing Characteristics:** Hub-and-spoke model integrating information technology (IT) and health information technology (HIT) with highly specialized medical expertise to deliver expert care in rural/remote areas; collaborations and mentoring between academic medical center experts and community-based providers; time-critical, cost-effective delivery of evidence-based medicine that can save lives, reduce risk of permanent disability, and improve quality of life.

South Carolina lies in the “buckle” of the Stroke Belt, suffering from a disproportionate burden of many chronic maladies including hypertension and stroke. The problem is compounded by the rural nature of the state and the ethnic and socio-economic disparities that amplify the incidence, prevalence, and complications associated with these diagnoses. With escalating health care costs impacting federal, state, and employer budgets, the economic consequences of disparities could be a key driver to effecting change, improving the quality of care for many Americans, and ensuring a military-ready population. The Stroke and Stroke Risk Reduction Initiative (SSRI) proposes to address these issues by enhancing the REACH (Remote Evaluation of Acute Ischemic Stroke) telemedicine system to attain earlier identification and management of patients with hypertension, especially those who are young and rural. The focus is on education, novel use of REACH Telemedicine, and to target stroke-related areas of disparity. These efforts are relevant because: we have far too many strokes, too many young persons are having stroke and too few patients are being treated urgently for stroke. The aims of this initiative are to: (1) Define and characterize the primary regions of interest; (2) Benchmark regions with and without REACH and evaluate the impact of telemedicine with regard to: access to care, awareness of stroke symptoms, appropriate response to stroke, attitudes regarding treatment, time from onset of symptoms to Emergency Department, and use of Alteplase (tPA); and (3) Provide targeted stroke and stroke prevention CME programs to health providers in the ROI. As a refinement to these initial aims, SSRI has also: (4) established an Epidemiology Core; (5) developed and submitted its first research protocol for IRB/TATRC approval; (6) expanded and improved access to stroke care through REACH; and (7) developed an administrative framework that supports SE VIEW’s vision of developing “a nationally recognized multidisciplinary, inter-professional team of researchers, educators, outreach professionals and laypersons to eliminate health disparities.”

As a component of the MUSC Stroke Center, SSRI established the SSRI administrative framework from which we defined and characterized the regions of interest that would be used for this research. The primary investigators, Robert J. Adams, MS, MD and Daniel Lackland DrPH, recruited a multidisciplinary, inter-professional team of researchers, educators, and outreach professionals. The SSRI team now includes neurologists, emergency medicine physicians, nurses, administrators, epidemiologists, health economists, disparities experts, research specialists, outreach personnel and others.

**Figure 4. Aim 1: Regions of Interest**





Potential partners are invited regularly to the weekly SSRI meetings and numerous collaborations have been created or expanded. The Regions of Interest (ROI) was defined and characterized with the disparities data collected. This approved SE VIEW Regions of Interest are depicted in **Fig 4**, and can be seen on the SE VIEW website. The two primary ROIs are the I-95 Corridor and Coastal Carolina – the regions where health disparities in S.C. are highest.

After the completion of **Aim I**, we refined it into two new/revised aims to support the original scope of work:

- **Aim I: SSRI Program Administration:** Maintain a strong, multidisciplinary team able to support program aims in a collaborative manner.
- **Aim IV: Epidemiology Core:** Developed Epidemiology Profiles & began to acquire/maintain overall data sets as a common resource for all SE VIEW cores.

### **Aim I: SSRI Program Administration**

The SSRI Team has continued its work; supporting and refining the aims of SE VIEW and SSRI while presenting and promoting these aims and early research findings in a variety of public forums and media venue. SSRI investigators and/or their representatives consistently participated in all SE VIEW meetings and completed all required reports, while developing numerous administrative tools to support these efforts including an action-oriented weekly meeting agenda. The team met with the SE VIEW evaluation consultants, who have been invited to attend an SSRI meeting in the near future, and continue to track and report on their activities each quarter.

The SSRI Team continues to submit and follow up with requests to the ORS for current data. The “Reaching Into RHIO (Regional Health Information Organization)” study’s primary objective will be the evaluation of the potential benefit of linking to the ORS database with REACH MUSC telemedicine system for acute treatment of ischemic strokes at Spoke (consulting ED’s) sites. The results will be used to design interventions for improved stroke care focused on secondary stroke prevention.

### **Aim II: Benchmark regions with and without REACH and evaluate the impact of telemedicine with regard to: (A) Access to care; (B) Awareness of stroke symptoms, appropriate response to stroke, attitudes regarding treatment; (C) Time from onset of symptoms to Emergency Department; and (D) Use of Alteplase (tPA)**

Data was collected where available and preliminary baseline analyses continued. The research study protocol developed, which proposed to conduct both primary research and secondary analyses to address this aim, is still in focus, including the SSRI Protocol. This SSRI Protocol was one of the first in SE VIEW to receive MUSC Institutional Review Board (IRB) approval (Protocol #00008039). The Protocol was then submitted to TATRC for final approval, along with a scientific letter from the IRB (dated February 25, 2011). **Final TATRC approval was received on January 25, 2012.**

#### **Aim II-A: Access to Care**

Completed using existing and publically available resources. The map seen in **Appendix 5** shows the dramatic affect that a telemedicine solution can have upon access to expert stroke care; illustrating how few Primary Stroke Centers there are in S.C. and how REACH has improved geographic access to stroke resources. **It was noted, “With REACH, 76% of South Carolinians now are within a 60-minute drive of tPA treatment compared to 38% prior to REACH. The percent increase in access was highest along the I-95 corridor; a predominantly rural, high disparities region of S.C.”** The findings from this original access analyses were refined and accepted as poster presentations and a published article: Kazley AS, Wilkerson RC, Jauch E, Adams RJ: Access to expert stroke care with telemedicine: REACH MUSC. Front. Neur. 3:44. doi: 10.3389/fneur.2012.00044. Epub 2012 Mar 21. **Milestone:** Concerted efforts to increase rt-PA use in SC are expected to save money for payers in

addition to improving quality of life for many stroke survivors. June 8-10, 2014: Academy Health's 2014 Annual Research Meeting (ARM), at the San Diego Convention Center. Abby Kazley, PhD. Abstract: Cost of Stroke in South Carolina

### **Aim II-B: Examine awareness of stroke symptoms, appropriate response to stroke, and attitudes regarding treatment**

To accomplish this aim, a survey of all patients having a REACH telestroke consult was developed and tested. The Protocol describes our research design and methods and contains all patient survey materials. SSRI has moved forward by communicating with all REACH MUSC hospital leaders, notify them of this research proposal, and provide copies of the patient materials, while also requesting their input and support for this upcoming research initiative. The patient survey data has been collected with further analyses after much delay with the collections of patient data, contacting the patient and entering of data into Red Cap Survey. **Milestone: Malek AM, Adams RJ, Debenham E, Boan AD, Kazley AS, Hyacinth HI, Voeks JH, Lackland DT.** Patient Awareness and Perception of Stroke Symptoms and the Use of 911. **May 2014.** DOI: 10.1016/j.jstrokecerebrovasdis.2014.05.011 (**in press**).

### **Aim II-C: Time from Onset of Symptoms to Emergency Department** (a.k.a. Onset-to-Door time)

It is SSRI's intention to obtain Emergency Medical Services (EMS) "run sheets" on all REACH patients that used EMS. With these data, SSRI will determine: (1) fraction of patients who used 911, (2) fraction of calls dispatched as a stroke, and (3) time interval from onset of symptoms to activation of 911. Early on a data request was developed, reviewed and submitted to the S.C. Department of Health and Environmental Control (DHEC) for two NEMISIS II data sets: one identified for REACH patients and one de-identified for all patients. In August 2011, an application for database was submitted and we met with the review committee to resolve any issues. The committee approved this application September 2011. Parameters and variables were received in association with that database in November 2011, and a formal request has been made for these new parameters.

While waiting for DHEC's release of the data, we began conducting preliminary analyses of critical time points in the REACH database for benchmarks. Knowing that delays occur prior to the patient arriving at the hospital are the primary contributors to the overall delay in stroke care (leading to worse stroke outcomes and mortality), we began to examine the feasibility of conducting a community-based assessment regarding the public's attitudes/opinions related to this issue with the intent of examining potential interventions. A goal we completed was for the SSRI to connect with colleagues in the Center for Community Health Partnerships, sponsors of the SE VIEW Community Engagement Scholars Program. Together we created the Community Engaged Assessment to Eliminate Stroke (CEASE) proposal and submitted it to the South Carolina Clinical & Translational Research Institute (SCTR) Pilot Project Program for funding. Funding was received from the SCTR Institute for this pilot project program and SSRI is involved with CEASE to work with its community partners. This initiative was exploring facilitators and intervention strategies to acute stroke care with Focus Group and Key Informant Interviews in the Georgetown, SC area. This is located in the Coastal Carolina County Region (**see Appendix 6**).

### **Aim II-D: Use of Alteplase (tPA)**

Early analyses indicated that the use of tPA was very low in South Carolina prior to the advent of the REACH MUSC Telemedicine Network (REACH). Currently with REACH, tPA has been given over 750 times since the programs inception in 2008 with the 6 original sites and expanding to 13 sites currently participating (**see Appendix 7**). While these REACH figures are continually impressive, **this aim is focused on comparing use of tPA among non-REACH sites with those that have had REACH** for at least 12 months. For this aim, **we have requested two data sets** from the S.C. Office of Research and Statistics (ORS). The application for data was submitted September 2011 to ORS and the

unrestricted dataset released. However, the linked dataset containing restricted data which is needed to make this comparison was not be released until the research protocols were approved by TATRC on January 25, 2012.

**Aim III: Providing targeted stroke, stroke prevention and sickle cell disease continuing medical education (CME) to health providers in the ROI and beyond**

This curriculum of approved CME stroke programs was developed by the team and with input from a designated partner in the ROI. SSRI collaborated with the S.C. Area Health Education Center (AHEC) to assess training needs and appropriate use of the South Carolina Health Occupations Outreach Learning System (SCHOOLS) distance-learning network. We continue to use this tele-training system and have had more speaker presentations on stroke. After a good response to this way of presentation and creating enduring materials for stroke the SSRI Stroke CME series (**Table 5**) will continue to be presented across this tele-training network.

**Table 5. Stroke CME Training Program Library**

TITLE	PRESENTER	BROADCAST DATE	OUTLINE PROGRAM LINKS
Selection of Drugs in Hypertension: Does it Make a Difference	William Cushman, MD	6/9/2014	TBA
Initial Treatment Approach and Strategies for the Management of Hypertension: A Model for Success	Joel Handler, MD	3/31/2014	TBA
Social Determinants and the Disparities in Stroke Risks	Gbenga Ogedegbe, MD, MS	12/9/2013	TBA
Social Determinants of Health: Race and Diabetes	Leonard Egede, MD, MS	10/8/2013	<a href="http://www.scahec.net/schools/programs/2013.10.08.social_determ.html">http://www.scahec.net/schools/programs/2013.10.08.social_determ.html</a>
Social Determinants of Health: Diabetes Risks and Management in the Stroke Patients	Brett Kissela, MD	8/28/2013	<a href="http://www.scahec.net/schools/programs/2013.08.28.social_determ.html">http://www.scahec.net/schools/programs/2013.08.28.social_determ.html</a>
Social Determinants of Health: Race and Stroke	Bruce Ovbiagele, MD, MSc	8/27/2013	<a href="http://www.scahec.net/schools/programs/2013.08.27.social_determ.html">http://www.scahec.net/schools/programs/2013.08.27.social_determ.html</a>
Racial Disparities in Stroke: Maybe it's Hypertension After All?	George Howard, DrPH	8/23/2013	<a href="http://www.scahec.net/schools/programs/2013.08.23.social_determ.html">http://www.scahec.net/schools/programs/2013.08.23.social_determ.html</a>
Race and the Social Determinants of Stroke	Virginia Howard, PhD	8/22/2013	<a href="http://www.scahec.net/schools/programs/2013.08.22.social_determ.html">http://www.scahec.net/schools/programs/2013.08.22.social_determ.html</a>
Renal Disease and Stroke Risk	Raymond Townsend	7/29/2013	TBA
CME Website - <a href="http://scahec.net/schools/library.html">http://scahec.net/schools/library.html</a>			

The team continues the planning and preparing of continuing medical education program for MD's, PA's, NPA's, PharmD's and others. The two completed module series is titled: Acute Stroke Management and Social Determinants.

The CME format will continue to be administered in both a traditional, “live” audience venue and across the state utilizing the SCHOOLS distance learning technology. This has increased the breadth of the CME offering by expanding access to the live broadcast to locations throughout the state. Perhaps more importantly, use of the SCHOOLS system allowed the Stroke CME programs to be preserved as enduring materials. This allows health professionals with Internet access to receive high quality stroke-related training and corresponding CME credits at their convenience. **This opportunity is now available to military health professionals.** Table 5 offers an overview of topics and provides links to access the programs as enduring materials. Further detail regarding this CME stroke series, may be found by accessing the CME website<sup>6</sup>.

The SSRI team has created specific REACH Site teleconferencing meetings. This allowed the CME group, REACH program manager and administrator to highlight a topic of specific interest to this group of REACH sites. Also, they will be able to review current accumulative data of all the sites using the telemedicine system for acute stroke care. This review will reveal to them their strengths and weaknesses as a whole in order to improve the length of time for stroke consults and care. Also under this education aim, the SSRI team has added an important goal to “**Educate the Next Generation**” (Aim III-E). Mentoring young health professionals and students in the area of stroke and stroke risk reduction adds sustainability to these efforts and may positively impact future stroke programs (Fig. 5). These individuals contributed to several poster presentations were responsible for assisting on some publications.

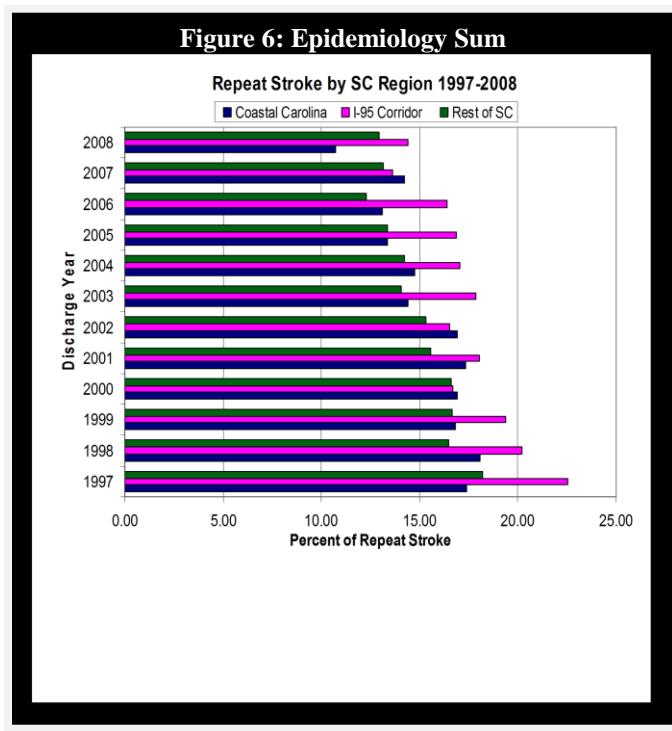
**Figure 5. Strike Out Mentors**



July 25, 2013 - “**Strike Out Stroke**” campaign (Fig. 5): Charleston Riverdogs baseball game. This is a blood pressure screening event for the public attending the RiverDogs baseball game. The trainees and mentors of the MUSC Stroke Center encouraged the fans of the Riverdogs team to become aware and educated about blood pressure. Over 150 blood pressure screens were given to public and the fans were also able to meet the Pro Football Hall of Fame member, Joe DeLamielleure. Organized by Daniel Lackland, DrPH and Andrea Boan, PhD.

#### **Aim IV: Epidemiology Core**

Evolved when early efforts related to Aim I demonstrated: (1) a need to develop Epidemiology Profiles depicting the ROI and (2) the importance of acquiring and maintaining standardized data sets as a common resource for all SE VIEW cores. This Epidemiology group was established under the leadership of SSRI Investigator, Daniel Lackland, DrPH. As noted, this group completed the Aim I by defining and characterizing the ROI and presenting these findings to the SE VIEW team. The group also began to collect a variety of data sets including emergency room, hospital, socioeconomic status (SES) and census data. The team began analyzing these data by ROI, validating the assumption these regions suffer from greater health disparities and reporting these findings to the other SE VIEW cores as requested. An interesting sample of the types of stroke data found in these early summary reports is provided as **Fig.6**, which shows a history of consistently higher repeat stroke among hospitalized patient residing in the I-95 Corridor as compared to the rest of S.C.

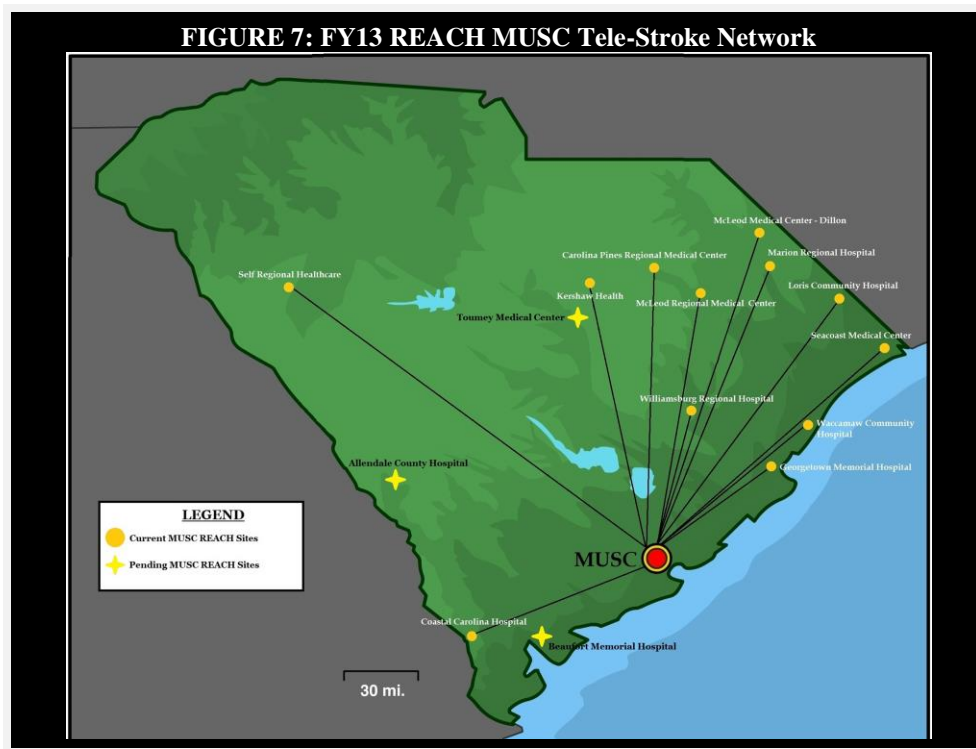


#### **Aim V: Stroke Care**

Focuses on an SSRI core responsibility, which is “to address these (stroke) issues by enhancing the REACH telemedicine system.” REACH MUSC is not just a technology, but a robust partnership between South Carolina’s rural and community hospitals and the MUSC Stroke Center; one of only nine JCAHO-designated Primary Stroke Center (PSC) and the only Comprehensive Stroke Center in the state. **SSRI is focusing on three methods of improving access to care by enhancing REACH: (A) site expansion, (B) program expansion and (C) patient care/follow-up.**

##### **Aim V-A: Site Expansion**

Refers to a continued expansion of geographic access to expert stroke care achieved by adding sites to the existing REACH Tele-Stroke Network. Currently discussions with potential sites in the Coastal Carolina and the I-95 Corridor Regions are in process. The REACH Tele-Stroke Network currently contains 13 hospitals with 2,031 hospital beds and 379,875 emergency room visits per year (**Fig. 7**). Since its inception in 2008, this network has facilitated over 4,388 consultations, with 778 receiving tPA (**Appendix 7**).



Data collected from these consultations provides a wealth of materials used in much of this SSRI research. There were two articles published in *Frontiers in Neurology*; “Access to expert stroke care with telemedicine: REACH MUSC”, by Abby Swanson Kazley, PhD and “REACH MUSC: a telemedicine facilitated network for stroke: initial operational experience”, by Robert J. Adams. Both of these publications provide excellent overviews of the REACH program, the network, its technologies and early findings demonstrating the viability of this telemedicine-facilitated network for urgent stroke care. The Stroke Center Directors and team produced the “Stroke Quarterly Newsletter” (see **Appendix 8 – first page of newsletter**), which was distributed to patients and physicians across the state of SC. The newsletter covers stroke education, awareness and publications. We continue discussing the possible integration of in-patient coverage via the REACH system with our sites. Also, we are working with Dee Ford, MD on her Tele-Critical Care Program to Reduce Rural Health Disparities to collaborate on her telemedicine technology and provider education design efforts. REACH Equipment will be upgraded to allow for this program to go into effect.

Team meetings with REACH MUSC sites emergency department personnel are to review the local Brain Attack Team protocols and identify ways to speed up the consult process for acute stroke patients. We give 45 minute presentations that cover all aspects of REACH MUSC, the impact on access to care in the state of South Carolina, outcomes and compare local site data to overall group data. Includes retraining and updating the staff on use of the telemedicine cart, criteria’s and administering tPA. REACH MUSC Site visits during FY14 include:

- **August 1, 2013** – Swaroop Pawar MD MPH has started his Advanced Vascular Neurology Fellowship with the stroke department. He will shadow the REACH MUSC Consultants to learn more about telemedicine for stroke and assist with any transfers from our sites.
- **August 2, 2013** – Beaufort Medical Center, Beaufort, SC; Site visit to discuss final questions from administrators and physicians about the stroke telemedicine program. Met with staff from all areas of the hospital involved in the ED and stroke services for a Q&A. Visit by: Adams, Holmstedt, Debenham, Sabatino, Hilbert
- **August 16, 2013** - Our REACH team, led by Dr. Adams and Ellen Debenham, received the green light to proceed with the tele-stroke contract in Beaufort. This will be the 13th site we provide services for through our REACH telemedicine program.
- **October 3, 2013** – Beaufort Medical Center, Beaufort, SC , Meeting and Presentation to the physicians and staff of the Emergency Department – Ellen Debenham, RN.



- **October 18, 2013** - Drs. Bonilha and Martz will be joining our REACH MUSC Telemedicine Services Program and participating in the remote management of acute stroke patients at sites throughout the State. This is a welcome development because the program needs providers to participate in the care of these patients.
- **February 3, 2014** – Chronicle Independent. “REACH brings Level 1 stroke care to KershawHealth”.
- **Training Sessions at REACH Sites for new equipment upgrade** (Telestroke Outreach Coordinators - Shelia Traficnate, James Vick; Telestroke Manager – Ellen Debenham, RN, CCRC)
  - **March 4, 2013** – Georgetown Memorial Hospital, Georgetown, SC
  - **March 5, 2014** – Waccamaw Community hospital, Murrells Inlet, SC
  - **March 12, 2014** – Carolina Hospital System – Marion, Mullings, SC
  - **March 18, 2014** – McLeod Health, Dillon, SC
  - **March 19-20, 2014** – McLeod Regional Hospital, Florence, SC
  - **March 23-24, 2014** - Self Regional Hospital, Greenwood, SC
  - **March 26, 2014** – Coastal Carolina Hospital, Hardeeville, SC and Williamsburg Regional Hospital, Kingstree, SC
- **April 30-May 1, 2014** - McLeod Regional Health, Florence SC – Access system training for ED staff and physicians. Ellen Debenham and James Vick.
- **May 7, 2014** – KershawHealth Training day for ED Physicians and Staff – James Vick, Program Coordinator/Telestroke Outreach
- **May 27, 2014** – Carolina Pines “Go-Live” Training – James Vick, Program Coordinator/Telestroke Outreach
- **May 28, 2014** – Tuomey Healthcare System, Sumter, SC - In preparation for the MUSC TeleStroke program starting at Tuomey Hospital, members of the MUSC stroke team will share their knowledge and experience of caring for Stroke patients. The physicians and medical staff on site will have the opportunity to benefit from their expertise in stroke care. This is a new partnership for Tuomey with MUSC and the implementation of the telestroke program. Visit by: RJ Adams, EC Jauch, C Holmstedt, E Debenham

**Milestone:** The technology for the telemedicine program has “gone live” and will offer multiple specialty services to our REACH Sites. An equipment upgrade has been completed for the REACH MUSC Sites.

### **Aim V-B: Program Expansion**

A REACH MUSC team led by SSRI Investigator Dr. Robert J. Adams collaborated with several other programs that were interested in exploring the feasibility of expanding REACH into other specialty areas. The team also provided consultative services to others interested in telemedicine but not necessarily in REACH. The Critical Care Excellence in Sepsis and Trauma (CREST) Program was the first non-stroke initiative to successfully expand the REACH platform into another specialty, adding four sites to the MUSC REACH Telemedicine Network. The REACH team continues to support CREST as it evolves. The first combination CREST/REACH site was established at Williamsburg Regional Hospital, with REACH staff offering support at the initial sepsis-training program. The SSRI Team currently will examine the feasibility of expansion into a primary care setting and is working with REACH Health, Inc., to develop a model for REACH Primary Care through their technology (Aim VI-B3).

### **Aim V-C: MUSC ECareNet Physician Portal; Patient Care Follow-up**

The telehealth program was implemented to allow physicians and hospital staff access to their referred patients’ medical records at MUSC; offering continuity of care directly from their community hospital.

REACH staff collaborated with the MUSC Physician Liaison Program to introduce the E-Care Net Viewer/Oacis program to our REACH partner sites. The Portal was first introduced to each *new* REACH sites during that site's initial implementation training program, at which time their providers learned how to register for OASIS access. Additionally, the REACH staff provided liaisons with contacts at all *existing* REACH sites so that they might further dissemination program information and registration providers at these partner sites.

The second effort supporting Aim IV-C, we are continuing the development of a **multimedia program which seeks to "Tell the Story" of stroke** by presenting patient and family experiences with REACH and the MUSC Stroke Center. This serves both as a means of documenting qualitative patient care information and demonstrating the actual connection with patients. Audio-video compilation of patient and family stories was developed and is now posted online, as well as available in DVD form for. An ongoing process is to continually collect and disseminate these patient stories depicting actual stroke care experiences. We have been able to have our Public Relations department post these as testimonies on our stroke website.

#### **B2b. Heart Health – Preventive Cardiology Research Center**

**Director:** Melissa Henshaw, MD, Associate Dean for Advocacy and Advancement; Assistant Professor of Pediatric Cardiology; Medical Director of Heart Health

**Goals:** Analyze resource allocation patterns and prioritize areas of need to deliver preventive cardiology and weight management services to medically underserved children; streamline data management efforts to facilitate flow of information among providers; develop data analysis methods to assess outcomes across cardiovascular risk parameters and co-morbid conditions; extend volunteer involvement and community engagement.

**Distinguishing Characteristics:** A collaborative network of pediatric heart care providers, working with MUSC's Children's Heart Center, form a unique platform for outreach to rural and other medically underserved children and families with known cardiovascular risk factors such as hypertension, pre-diabetes and dyslipidemia.

Heart Health is both the weight management program of the MUSC Children's Hospital and the preventive cardiology service of the MUSC Children's Heart Center. It is a comprehensive pediatric obesity program with medical, nutrition, behavioral, and fitness components. The program addresses the root causes of cardiovascular health disparities through a multi-disciplinary approach to the treatment of pediatric obesity and its attendant cardiovascular risk factors. Heart Health serves patients ages 2 through 22 who are affected by childhood obesity and cardiovascular disease risk factors such as hypertension, pre-diabetes, and dyslipidemia. Over 90% of Heart Health patients are from traditionally under-served minority families with limited financial means, with approximately 75% of our patients insured through Medicaid. Our Hispanic population has increased from 8% to 32% of our patients during the past year. Almost half of our patients have the metabolic syndrome, and 85% of Heart Health patients have at least 2 cardiovascular risk factors at presentation. Through a series of medical evaluations, one-on-one nutrition education and behavioral counseling visits, group education classes and counseling sessions, age-appropriate fitness sessions, and other related activities, Heart Health teaches children and families how to improve their nutrition, activity, and lifestyle-related behaviors to manage weight and improve cardiovascular risk. In addition to the comprehensive clinical services offered through Heart Health, the Preventive Cardiology Research Center provides a variety of school and community engagement services and pipeline training activities that are centered on the reduction of childhood obesity and pediatric cardiovascular health disparities through outreach, education, and research.

### **Administration:**

Melissa Henshaw, MD, MSCR, DHA, continues to direct both Heart Health and the Preventive Cardiology Research Center. Yar Chowdhury, MD, completed his fellowship training in pediatric cardiology and continues on as a faculty member with the Center, focusing on cardiovascular imaging. Tiffany Williams, DNP, PNP, joined Heart Health after completing her residency with Heart Health and graduating from the MUSC Doctoral Nursing Program. Dr. Williams is also a recipient of the SE VIEW Junior Faculty Development Program (JFDP). Janet Carter, MS, RD, is the program manager and Molly Jones, RD, serves as the clinical dietitian. Kyle Kelly is our fitness specialist and coordinator; he will begin medical school at MUSC in August 2014. Robyn Haertel is the administrative assistant and clinic scheduler. Tom Hulsey, ScD, also supports the Preventive Cardiology Research Center, providing critical statistical analysis for core projects.

Former members of the team have moved on to exciting new directions. Phil Saul, MD, director of the Children's Heart Program of SC, has taken on a new role as chair of the Department of Pediatrics at Nationwide Children's Hospital in Ohio. Girish Shirali, MD, is chief of the division of pediatric cardiology at Mercy Children's Hospital. Brad Friedman, MD, joined a private pediatric cardiology practice in NC after his year with the Center. Tony Hlavacek, MD, remains with the division of pediatric cardiology here, devoting most of his time to invasive cardiac imaging. Christine Carter-Kent, MD, also remains at MUSC in the division of pediatric gastroenterology, where she focuses primarily on clinical care and hepatic steatosis research. Maggie McDaris, RD, left MUSC to serve as a missionary. Chrissy Andrews, MSW, moved to Florida and Sarah Stein is currently pursuing her master's degree in exercise science at The Citadel.

### **Clinical Progress:**

Heart Health was initially designed to accommodate 10 new patients per month. The program was limited at this level until external support was secured through SE VIEW in July 2010 and from The Boeing Company in January 2011, allowing management to develop the range and scope of Heart Health's services throughout the MUSC catchment area. This support has allowed the program to grow from an obesity treatment Stage 2 (structured weight management) model to a Stage 4 (tertiary care) model, as recommended for children's hospitals by the American Academy of Pediatrics. Heart Health has more than tripled in size since 2010, with continued rapid expansion. From an initial service line of 4 clinics and 1 group session per week offered at one location, we have gradually expanded to add an additional service site each year. Heart Health now offers 4 clinics per week in downtown Charleston, 4 clinics per week in North Charleston, 4 clinics per week in Summerville, SC, and 2 clinics per week in Mount Pleasant, SC. The team also offers 2 tele-medicine clinics per week, 2 group sessions per week (downtown and in North Charleston), and fitness sessions 6 days per week (downtown at The Citadel on Monday through Friday afternoons and in North Charleston on Saturday mornings). We are also providing summer camps again this year, and staff a number of community and school educational events throughout the year. Dr. Henshaw is the only pediatrician in SC who is also board certified in Obesity Medicine, and will also serve as the Pediatric Medical Advisor for the new Adolescent Bariatric Surgery Program at MUSC. She serves on a number of national workgroups and committees, most recently adding the Pediatric Lipidology Executive Committee of the National Lipid Association.

### **Scientific Progress:**

The Preventive Cardiology Research Center continues to provide vital pipeline training for students, residents, and fellows. In addition to serving as the principal investigator of the SCTR-supported Pediatric Metabolic Syndrome Study and Director of the SE VIEW Preventive Cardiology Research Center, Dr. Henshaw also serves on the Clinical Trial Committee and as site PI of the NHLBI Pediatric Heart Network's Dyslipidemia of Obesity Intervention Trial (DO IT!). She also serves on the Protocol Development Committee and as site PI for the NHLBI Pediatric Heart Network's Dyslipidemia of

Obesity Intervention Trial Ancillary Study: Impact of Healthy Lifestyle Patterns (I HeLP DO IT!). Dr. Henshaw has been fortunate to serve as mentor for Tiffany Williams, DNP, PNP, during her DNP residency and for the SE VIEW Junior Faculty Development Program. In 2013, Dr. Williams was selected to attend the Robert Wood Johnson Foundation's New Connections Annual Symposium, as well as the Program to Increase Diversity in Cardiovascular Health Research (CVD-PRIDE) at SUNY Downstate.

Yar Chowdhury, MD, has completed his three-year NIH T32 research project with the Preventive Cardiology Research Center on the impact of 3D echo and carotid intima-media thickness (cIMT) measurements in the early detection of left ventricular hypertrophy and atherosclerosis in obese children and adolescents. He received a Career Development Award from the American Society of Echocardiography in 2012 to support further research into health disparities in cIMT findings from the Pediatric Metabolic Syndrome Study. This work was presented at the MUSC Obesity Scientific Retreat in 10/12, and Dr. Chowdhury was selected as a finalist for the Young Investigators Award competition at the American Society of Echocardiography's national meeting in 2013. Dr. Chowdhury also received a Research Fellowship Award from the American Academy of Pediatrics Section on Cardiology in 2013 to further support our cardiovascular imaging research. The Center published its initial paper from the Pediatric Metabolic Syndrome Study in 2014, in the journal of the American Society of Echocardiography.

The Center has also supported the research efforts of a number of students and residents, including three MUSC Summer Health Professionals students with interests in pediatric cardiovascular health disparities research (Jennifer Paige, Brielle Weinstein, and Selina Juarez). Since SE VIEW funding began, we have had several abstracts and publications accepted for presentation at local, regional, and national meetings:

- Young MD, **Henshaw M**, Carter JR, Martin KL. Pediatric Metabolic Syndrome Study: Children and adolescents with abnormal weight gain under report food intake. Obesity Week: Annual Scientific Meeting of The Obesity Society and the American Society for Metabolic and Bariatric Surgery. November 2, 2014.
- Osborne C, **Henshaw MH**. Fasting insulin levels in a pre-diabetic pediatric population. MUSC Darby Children's Research Institute Pediatric Research Day. March 27, 2014.
- Weinstein B, Carter J, Stein S, **Henshaw M**. Pediatric Metabolic Syndrome Study: Is waist circumference a better indicator of pre-diabetes than body mass index? MUSC Darby Children's Research Institute Pediatric Research Day. March 27, 2014.
- Jackson L, **Henshaw MH**, Carter J, Hulsey T, Chowdhury SM. Sex-specific lean body mass predictive equations are accurate in the obese pediatric population. Cardiology 2014: Children's Hospital of Philadelphia's 17<sup>th</sup> Annual Update on Pediatric and Congenital Cardiovascular Disease. February 22, 2014.
- Shea JR, **Henshaw MH**, Carter J, Levitan B, Hulsey T, Chowdhury SM. Lean body mass is the strongest predictor of left ventricular mass in the obese pediatric population. Cardiology 2014: Children's Hospital of Philadelphia's 17<sup>th</sup> Annual Update on Pediatric and Congenital Cardiovascular Disease. February 22, 2014.
- Osborne CS, Stein S, Carter J, **Henshaw M**. Anthropometric variables and body composition data as predictors for adiponectin levels in an overweight and obese youth population. MUSC Research Day. November 18, 2013.
- Weinstein B, Carter J, Stein S, **Henshaw M**. Pediatric Metabolic Syndrome Study: Is waist circumference a better indicator of pre-diabetes than body mass index? MUSC Research Day. November 18, 2013.
- Osborne CS, Stein S, Carter J, **Henshaw M**. Anthropometric variables and body composition data as predictors for adiponectin levels in an overweight and obese youth population. Obesity

Week: Annual Scientific Meeting of The Obesity Society and the American Society for Metabolic and Bariatric Surgery. November 13, 2013.

- Chowdhury SM, **Henshaw MH**, Friedman B, Saul JP, Carter J, Levitan B, Hulsey T. Investigating racial disparities in cardiovascular risk. American Academy of Pediatrics Section on Cardiology and Cardiac Surgery Young Investigator Abstract Presentations. October 28, 2013.
- Weinstein B, Carter J, Stein S, **Henshaw M**. Pediatric Metabolic Syndrome Study: Correlations between simple diagnostics and symptoms of early diabetes. Irish-American Paediatric Society Annual Meeting. September 27, 2013.
- Osborne C, **Henshaw MH**. Fasting insulin levels in a pre-diabetic pediatric population. 19<sup>th</sup> Annual MUSC Fall Symposium for Primary Care Providers. September 19, 2013.
- Weinstein B, Carter J, Stein S, **Henshaw M**. Pediatric Metabolic Syndrome Study: Correlations between simple diagnostics and symptoms of early diabetes. 19<sup>th</sup> Annual MUSC Fall Symposium for Primary Care Providers. September 19, 2013.
- Chowdhury SM, **Henshaw MH**, Friedman B, Saul JP, Shirali GS, Carter J, Levitan BM, Hulsey T. Lean Body Mass May Explain Apparent Racial Differences in Carotid Intima-Media Thickness in Obese Children. Journal of the American Society of Echocardiography. 2014; 27: 561-567.

**B2c. SC TeleSupport: Diabetes Management Initiative (Effectiveness of Technology-Assisted Case Management in Low Income Adults with Type 2 Diabetes)**

**Director:** Leonard E. Egede, MD, MS, Professor, Department of Medicine

**Goals:** Long-term: Develop a sustainable system of diabetes management to help low income patients achieve and maintain goals within established treatment guidelines regardless of geographic location. Immediate: Employ info tech to improve patient-provider communications and patient adherence to prescribed therapy.

**Distinguishing Characteristics:** Widespread penetration of cell phone technology presents an opportunity to employ a technology familiar to most, regardless of socioeconomic status or location. This project will conduct a randomized clinical trial project using CONFIDANT, an inexpensive, off-the-shelf cell phone technology whereby a person/caregiver and a provider can communicate data accurately, and the innovative FORA system, an inexpensive, off-the-shelf health technology with a 2-in-1 Blood Glucose and Blood Pressure monitor, coupled with nurse case management to optimize diabetes care for low income, rural adults with type 2 diabetes. The target population will be low-income patients served in Federally Qualified Health Care Centers (FQHCs) with poorly controlled T2DM residing in coastal South Carolina.

The project aims to develop a practical and sustainable system of diabetes management that will help low income patients achieve and maintain goals within established treatment guidelines regardless of geographic location. This randomized clinical trial will employ the innovative FORA system, an inexpensive, off-the-shelf, state-of-the-art technology comprised of a 2-in-1 Blood Glucose and Blood Pressure monitor, coupled with nurse case management to optimize diabetes care for low income, rural adults with type 2 diabetes. The primary outcome will be hemoglobin A1c (HbA1c) at 6 months post-randomization while the secondary outcomes will be blood pressure control and quality of life at 6 months post-randomization.

On August 10, 2012, the team received approval to begin recruitment at the Downtown location. At this point in the study, the team had enrolled 74 participants: 31 from Summerville, 3 from Johns Island, and 40 from Enterprise. Twenty-six participants completed the study, and 46 had completed the three-month follow-up appointments. In an effort to increase the number of patients available for recruitment, two clinical sites were added. This increased the number of clinical sites within the Franklin C. Fetter system to five (Enterprise, Summerville, Downtown, Hollywood and Johns Island). Recruitment

increased to 100 participants: 31 from Summerville, 3 from Johns Island, 40 from Enterprise, 25 from Downtown, and 1 from Hollywood. Forty-nine participants completed the study, and 50 completed three-month appointments. As in the previous quarters, the majority of the participants were uploading readings regularly, and the nurse was still titrating medications to control abnormal readings.

During **FY13**, recruitment efforts continued and patient recruitment increased to 114 participants (**Table 6**). To date, 69 participants have completed the study, and 83 have completed the three-month follow-up assessment. The team continues to foster partnerships with the companies that design and develop telemedicine products. It is important to note that the project team could not complete the randomization and follow-up of 200 subjects as originally planned. The project had to stop enrollment and follow-up, as funds were exhausted.

During **FY14**, the team focused on analyzing the data.

**Table 6: SC TeleSupport Recruitment**

Recruitment Site	FY11	FY12	FY13
Enterprise, SC	40	0	1
Summerville, SC	31	0	0
Johns Island, SC	3	0	0
Downtown Chas.	0	25	5
Hollywood, SC	0	1	8

#### **B2d. Tele-Critical Care to Reduce Rural Health Disparities**

**Director:** Dee Ford, MD, Assistant Professor of Pulmonary and Critical Care Medicine

**Goal:** Improve management of sepsis by engaging rural hospitals in a telemedicine network.

**Distinguishing Characteristics:** Demonstrated ability to develop trusting, mutually respectful associations prerequisite to engaging rural community hospitals in a telemedicine network. Partnerships require both concurrence of hospital administration and agreement of senior community practitioners.

Critical care is a specialty devoted to the evaluation and management of patients with immediately life threatening organ system failure(s). Critical care represents high stakes, high cost, acute care provided to patients suffering from a variety of potentially life-threatening conditions. Approximately 20% of Americans will die in or proximal to an intensive care unit (ICU) admission. Nationally, the cost of critical care represents 1% of the gross domestic product and consumes 20% of all health care costs. For many diagnoses, mortality and morbidity is reduced through the use of specialist directed care and by receiving care at higher volume centers.<sup>7</sup> Several specialties within critical care (trauma surgery and neonatology) have demonstrated that patient outcomes are improved via care at higher volume centers and therefore have established tiered systems of regionalization so that these patient populations can access the needed services and specialists expeditiously.<sup>8-11</sup> Similarly, outcomes among the most common medical diagnoses leading to critical illness - sepsis and respiratory failure requiring mechanical ventilation - are improved through care at higher volume centers and by intensivist directed management.<sup>12-17</sup> Thus, professional societies have begun calling for a tiered system of regionalization for patients suffering from medical critical illnesses.<sup>18,19</sup> However, important theoretical and practical barriers exist before this can be accomplished. Barriers include a desire among hospitals and providers



at lower volume hospitals to retain their patients, lack of capacity at higher volume hospitals to accept all potentially appropriate patient transfers, lack of intensivist physician staff, lack of ICU ancillary staff, and lack of agreed upon criteria for designation of different levels of care and patient selection criteria for transfer.<sup>20,21</sup> These and other barriers are likely to be more significant in rural and medically underserved areas.<sup>16</sup> Novel, outside-the-box approaches are required. Thus, it is generally conceded that in order to globally improve outcomes for critically ill patients, a combination of inter-institutional collaboration, clinician education, quality improvement efforts, transfer of appropriate patients to higher volume hospitals, and other creative solutions such as tele-medicine programs will be necessary.

The SE VIEW program in tele-critical care, began in July 2010, remains underway with the continued evaluation of the baseline patterns of inter-institutional transfers among critically ill adult patients in South Carolina (SC) with sepsis and respiratory failure as well as associated variation in patient outcomes. Covariates of particular interest included the effect of being from or cared for in a medically underserved community, race-associated variation, and the implications of staying in place versus referral to a larger hospital as well as the timing of inter-hospital transfers. The goal for year 4 was to improve the care of critically ill patients in partner hospitals' ICUs by improving patient safety and quality of care, implementing evidence-based best practices, offering multi-disciplinary education, and providing 24/7/365 access to MUSC's board certified and experienced intensivists for tele-consultation and patient follow-up.

The project team submitted the continuing review application and received approval in July 2012 from the MUSC Institutional Review Board. The approval was forwarded USAMRMC HRPO and received acknowledgment in December 2012. The following highlights program activity:

- The team consists of a scientific and administrative team with previous telemedicine research experience. The team consisted of the principal investigator, Dee W. Ford, MD; health services co-investigator, Kit Simpson, PhD; behavior scientist and program evaluation co-investigator, Jane Zapka, ScD; administrative program associate, Kate Taylor; and administrative program coordinator, Laura Langston. The team was further enhanced over the study period with the addition of Andrew Goodwin, MD, Lara Hiott, MD and Nandita Nadig, MD. Study personnel have learned the critical, lengthy, and delicate task required for an inter-institutional study and engaging a rural community hospital into a tele-medicine network – developing a trusting, mutually respectable association.
- Over the course of the project, the study was able to leverage the research accomplishments from the NIH funded study, Critical Care Excellence in Sepsis and Trauma (CREST) creating synergy with and supporting SE VIEW's objectives with the development of a preventive medicine, health and wellness online enduring clinical education program in the treatment of critical illness with CME/CE credit awarded via MUSC and SC Area Health Education Consortium (AHEC). Additional education opportunities were created for medical personnel throughout SC with the study team leading education programs at rural medically underserved hospitals, such as Regional Medical Center of Orangeburg, Georgetown Memorial, Waccamaw Community Hospital, Beaufort Memorial, and McLeod Regional.
- Financial resources were secured for project sustainability with funding successfully gained from South Carolina Clinical & Translational Research Institute for a pilot project investigating the decision making framework among clinicians at referring hospitals to MUSC's MICU and analyzing administrative data to understand the clinical and economic implications of this transfer practice in 2012. The analysis and comparisons of the qualitative and quantitative data from this study's aims provided rich information to formulate a model of care to improve inter-hospital collaboration and outcomes for patients with sepsis and VDRF and explicate a strategic plan for regionalizing medical critical care. Further, this project collaborated with the SC Hospital Association (SCHA). The cooperative relationship with SCHA allowed MUSC's

critical care multi-disciplinary team to collaborate with their colleagues at community hospitals incorporating MUSC's ongoing critical care quality and patient safety initiatives, including bidirectional data-sharing, protocol sharing, and real-time telemedicine consultation between MUSC intensivists, clinicians, and patients and allows for future intervention proposals.

- The SE VIEW investigators, Drs. Ford and Simpson, served as mentors to local Academic Magnet high school student, Nate Silvestri. Under the supervision of Drs. Ford and Simpson, Nate assisted with analyzing de-identified administrative hospital data, completed his senior year thesis project and presented to the SE VIEW team and his high school faculty advisor in February 2013.
- SE VIEW investigators had enhanced collaboration and partnerships with other MUSC telemedicine programs, such as REACH Stroke, Alzheimer's, REAL Cancer, and pediatric asthma. These relationships provided a forum for sharing information and best practices in supporting remote clinical consultations and diagnostics. MUSC staff worked together showing solidarity between the various telemedicine programs.
- Information learned led to the sustainability of the SE VIEW tele-critical care. The program is sustainable with the financial resources of a \$1.4 million grant gained from the Duke Endowment for multi-year project for a state-wide tele-critical care program. This grant's funding provides for critical care quality improvement, education, and evaluation of the overall MUSC/AICU Critical Care Telemedicine statewide program. In January 2014, a formal agreement was finalized between Advanced ICU Care and the Medical University of South Carolina. This endeavor is a public – private collaborative partnership providing a new model to improve patient care and support community hospitals statewide. This program will allow patients in community hospitals to have immediate contact with intensivists—board-certified, critical care physicians who have received specialized training in the care of ICU patients. This model will allow MUSC to deliver cost effective appropriate care to patients in local community hospitals; thereby, improving the health of South Carolina's military recruitment population. Through telemedicine these intensivist physicians can provide the same standard of care for all patients in SC providing a solution to the current intensive care dilemma and allowing patients to remain close to home. The program has targeted four hospital systems which include eight medical facilities: Regional Medical Center of Orangeburg, Orangeburg, SC; Georgetown Memorial of Georgetown, SC; Waccamaw Community of Murrells Inlet, SC; McLeod Regional of Florence, SC; McLeod Dillion of Dillion, SC; McLeod Darlington of Darlington, SC; McLeod Loris or Loris, SC; and Beaufort Memorial of Beaufort, SC.

### **B3. Objective B3: Establish a Community Partnerships and Outreach Program to reduce health disparities.**

Program initiatives will provide the foundation for integrated efforts to address chronic disease burden in populations that could provide talented recruits for military service. These initiatives also will develop robust dissemination strategies to maximize adoption of program recommendations. This objective includes six initiatives.

#### **B3a. Lean Team Initiative**

**Director:** Janice Key, MD, Professor and Director of Adolescent Medicine

**Goal:** Prevent and treat childhood obesity through effective school-based partnerships at the high school level

**Distinguishing Characteristics:** The Lean Team initiative is based on an active program providing nutrition education and skills training for students at Burke High School, a Title 1 school with >95% African-American students. The program targets students, teachers and families. Through SE VIEW, the initiative is extending to multiple schools with an overarching goal of prevention and treatment of childhood obesity through individual, family and community change.

As part of SE VIEW, the Lean Team project, “Understanding and Improving Health and Fitness Knowledge, Attitudes and Behaviors of JROTC Students in Charleston County” used a portfolio of proven approaches to achieve our overall program goal of obesity prevention. While the research portion of the project sought to achieve this through individual body composition assessments, nutrition counseling and classroom education; the non-research part of our project established a school-based wellness initiative that would increase access to healthy foods and create more opportunities for physical activity. The four main components of our project were:

- Identifying and improving nutrition and physical activity habits of JROTC students in 11 high schools in the Charleston County School District (CCSD)
- Establishing infrastructure to support improvements in school health environment through the establishment of school wellness committees that would make policy, systems and environmental (PSE) changes
- Developing a School Wellness Checklist (SWC) tool to monitor the PSE changes
- Engaging physicians in school health efforts through the establishment of a “Doc’s Adopt” program.

The project yielded some valuable information related to teen weight assessments, health practices, challenges and future needs. The majority of students in our study were overweight/obese, drank too much sugared-beverages, consumed few fruits and vegetables, engaged in high amounts of screen time but did little regular physical activity. Our research study was designed as a limited intervention study to learn specifically about the nutrition and physical activity habits of 800 teens enrolled in JROTC programs in 11 high schools in Charleston County. We measured BMI and % Body Fat to assess weight status and used a modified Youth Risk Behavior Surveillance System (YRBSS) survey to capture physical activity and eating behaviors. Students were individually counseled about how to improve their nutrition and physical activity habits and received at least one class on nutrition education taught by a Registered Dietitian or Dietetic intern. Resources for teachers and families were also available on our website ([www.musc.edu/leanteam](http://www.musc.edu/leanteam)). In addition, through separate student and instructor focus groups, we identified challenges teens face in practicing healthy behaviors and learned of ways to engage JROTC instructors in promoting health and wellness.

The non-research, school-based work has continued beyond the scope of this project through partnerships and collaborations with private sector businesses and governmental agencies, resulting in increased capacity and sustainability of our prevention efforts. A partnership with the Boeing Company, led to the establishment of the MUSC Boeing Center for Children’s Wellness (BCCW, formerly Lean Team), which is headed by SE VIEW co-investigator, Dr. Janice Key, who serves as its Director of Community and Schools. This support has enabled us to build an effective, simple and replicable school-based health initiative model and expand this model to two additional South Carolina counties, Berkeley and Dorchester. Implementation of our initiative, has led schools to make significant policy, systemic and environmental changes that have positively impacted the health environment of 113 schools and reaching nearly 80,000 students in three counties. In addition, schools that were adopted by physicians as part of the “Docs’ Adopt” component of our model made greater changes than schools without an adopting physician. The success of this initiative has generated interest from several communities that will lead to statewide replication of our model and further impact the health of South Carolinians.

### **Key Research Findings:**

Through this SE VIEW supported project, we identified a number of challenges to healthier eating and regular physical activity that teens face in a school environment. In addition, we identified strategies that could be employed in a school setting to improve weight status, nutrition and exercise habits. Our portfolio approach included: individual assessment of Body Mass Index (BMI) and percent Body Fat

(%BF), diet and exercise counseling, classroom instruction, focus group sessions, structured exit interviews and surveys of instructors and evaluation of the JROTC curriculum materials used in the various schools as well as the nature and frequency of instructor training. Detailed results are in the Appendices while an overview of these findings are presented below. We collected baseline data on 806 participants (43% of cohort); 788 students and 18 JROTC instructors from 11 high schools and second assessment data on 489 students and 17 instructors from four of the high schools (1 rural, 2 suburban and 1 urban). The incidence of overweight/obese was high in both the students (44%) and instructors (67%) enrolled in our study. Many of the JROTC students had unhealthy weights and lifestyles and did not become more fit as they advanced through high school. Forty-four percent of students were classified as Overweight/Obese based on BMI and this significantly varied by gender (60% of girls were Overweight/Obese) and ethnicity (76% H, 59% AA, 45% W) but not by grade. Contrary to what we hypothesized, there was no significant difference in mean BMI between 9<sup>th</sup> and 12<sup>th</sup> grade JROTC students, suggesting, that school environment plays a role in student health. In addition, we found BMI to be a less accurate measure of Overfatness in those students who fell in the mid to upper range of BMI (75<sup>th</sup>-90<sup>th</sup> percentile) therefore, additional assessment methods may be warranted to accurately classify weight status in teens. In general, the majority of students failed to meet recommended guidelines for fruit and vegetable intake (93%) and daily physical activity (64%); exceeded screen time limits (83%) and consumed too many sugared beverages (96%). Students indicated in focus group sessions that they desired additional nutrition curriculum, gender specific physical activities, weight status assessment and counseling by a qualified health professional such as a school nurse or dietitian and for schools to offer healthier food choices. Of the 18 JROTC instructors who participated; 67% of them were overweight/obese based on BMI measurements, 94% were male, 6% female (1 black female). Of the males, 65% were white, 29% black, and 6% Hispanic. The mean age was 53.3 years ( $\pm 5.3$ ). We learned through focus groups with the instructors, that they although many of them struggled with their own health issues they wanted to encourage students to lead healthier lifestyles. They indicated a desire for additional training in nutrition and like students, wished there were healthier food choices in schools; although, we noted during site visits, that JROTC often sold unhealthy foods as fundraisers to support their program. An overview of key focus group findings is listed below:

- Students
  - Joined JROTC for wide variety of reasons
  - Most enjoy the nutrition, physical activity curriculum but only get it 1X in 4 years
  - Want nutrition education activities they can relate to that are meaningful/personal
  - Want nutrition counseling/fitness evaluation by someone other than instructor
  - Expressed need for gender-specific Physical Training and Physical Activity
  - Expressed need for better food choices in schools
  - Indicated healthy food wasn't always available and was too expensive
- Instructors
  - Committed to promoting healthy behaviors to students
  - Most strive to "lead by example"
  - Would like additional training in Nutrition, Health Education and Physical Education
    - Some service branches update textbooks or send supplemental curriculum but offer little/no actual training
    - Inquired if they could attend PE, Health Education professional development (PD) days at their school
  - Expressed need for better food choices at school

In addition, as part of this project, each school received a digital scale, stadiometer and hand-held bioelectrical impedance analyzer to capacitate them to conduct future weight status assessments. We

also conducted exit interviews with all of the JROTC instructors and collected written surveys from 89% (16/18) of them. During the site visits and interviews, we shared de-identified group summary project results, obtained completed surveys and trained instructors and a school wellness committee lead on the proper collection of BMI measurements and its associated risks. Through the exit survey, we determined that overall satisfaction with the project was high and instructors found the sharing of results with them to be informative and worthwhile. They also liked the fact that the project didn't target or single out obese students but instead was inclusive and had the goal of improved wellness for all students. Similar to the findings in the student focus groups, the instructors thought the one-on-one, individual assessments and counseling were a desirable and effective way of motivating students to lead healthier lifestyles. Instructors indicated that as a result of what they learned during this project, they were more likely to encourage students to make changes in their eating and exercise habits, lead more by example and incorporate more nutrition education into the classroom. Additionally, an unexpected outcome of this project was that we learned that some female athletes lacked adequate supportive sports bras that hindered their ability to engage in regular, vigorous physical activity. This knowledge led to a partnership between MUSC BCCW and a local business that started a sustainable bra donation campaign "Support the Girls" and established a goal of fitting all female JROTC cadets with sports bras. Schools and the community quickly adopted this simple idea and 159 girls in 3 of the high schools were outfitted with high quality sports bras this school year. The donation campaign continues today.

To date we have published two abstracts; -"Doctor, it's all muscle!"- Comparison of body fat versus BMI in assessment of obesity in teens. JD. Key, et al., at the Pediatric Academic Society (May 2013) and "Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students". JD Key, et al., The Obesity Society (September 2012). We intend to publish at least one manuscript but additional analysis for publication in a peer reviewed scientific journal is needed.

The 5 main project activities were implemented as planned with little exception and all major goals were met or exceeded. Greater than expected participation (sample size), project timeline and school constraints, led us to change our originally proposed protocol from collecting quarterly individual assessments to doing baseline and a follow-up; we did not monitor blood pressure. **Table 7** reflects key activities, outcomes, goals, achievements and unexpected outcomes resulting from the project.

**Table 7:**  
**Project Evaluation of Lean Team "Understanding and Improving Health and Fitness Knowledge, Attitudes and Behaviors of JROTC Students in Charleston County"**

Activity	Outcome	Goal	Achievements	Unexpected Outcomes
1. Individual assessment and counseling of JROTC students (n=1800) about nutrition and exercise every 3 months (weight, height, body mass index (BMI), % body fat, blood pressure (BP) and a survey of eating and exercise habits)	Baseline and quarterly repeat assessment of 50% of study participants	Improved JROTC fitness	No significant difference in BMI between Survey 1 and 2; We did not monitor BP	Large sample size, project and school time constraints allowed for baseline and second survey of 60% of study participants
2. Social network support of healthy behavior changes among teachers, students, and family members	Increase followers of facebook page and twitter by 100%	Support healthier behavior changes	Facebook page and twitter accounts were established	Did not track identifiable likes and followers

3.	Classroom education about nutrition and fitness, with close coordination to meet the curricular objectives for JROTC through enhancement of existing JROTC health and nutrition curricula	Develop 4 PowerPoint's on nutrition and fitness and test instructor knowledge and use	Improved effectiveness of JROTC classroom education about health, fitness & nutrition	Developed 4 PowerPoint modules but did not survey instructor knowledge or use.	Exit interviews and surveys of instructors suggested they plan to incorporate more nutrition and fitness education in classroom.
4.	School cultural change through participation on the CCSD Coordinated School Health Advisory Council and with the establishment of individual school wellness councils	Establish wellness committees in >80% CCSD schools, develop a wellness checklist tool to track effectiveness of school health initiative, Train physicians to adopt schools and serve on wellness committees	Healthier school policies and environment in 80% of CCSD schools	School Wellness Checklist (SWC) tool developed and piloted in CCSD schools; >85% established effective wellness committees leading to major PSE changes in nutrition and physical activity; > 50% were adopted by physicians (Doc's Adopt)	Our SWC was adopted successfully for 4 yrs. in CCSD, replicated and expanded to 2 other counties (Berkeley, Dorchester) who also successfully adopted the model in 54% and 100% of schools, respectively
5.	Web-based resources for teachers about health and physical activities (for example "Deskercise" - classroom exercise routines that students can do while seated in their desks). See website: <a href="http://www.musc.edu/leanteam">http://www.musc.edu/leanteam</a>	Created web-based resources on nutrition and physical activity (PA) for use by teachers	Improved classroom health, education and physical activity	Our healthy cooking, yoga and Deskercise videos were the highest viewed resources on our website.	71% of schools in all 3 counties increased daily PA; 75% promoted water drinking; 32% instituted non-food reward policies, and 89% started gardens

Our participation in the SE VIEW project helped us to obtain additional funding to continue refinement, replication and expansion of our school-based wellness initiative in South Carolina. Future projects should address improvement of school health environment, instructor training; gender specific fitness needs and weight status assessment methods by gender and race.

### **SE VIEW Collaborations and Synergy:**

The formation of SE VIEW, fostered an atmosphere of collaboration at MUSC and with the community which has led to a better understanding of the health needs of South Carolinians and the creation of methods to better deal with those needs. Throughout this project period, several new partnerships and collaborative efforts within SE VIEW formed. Many of which have led to streamlined, comprehensive efforts in the same target populations and to new or continued funding streams, adding to our collective impact on the residents of South Carolina and generating effective models that can be replicated in other communities. The list below highlights SE VIEW collaborations:

- Dr. Jimmy McElligott (Telemedicine)
  - Advice and technical assistance on data/project outcomes
  - school-subcommittee member
- Dr. Carolyn Jenkins- (South Carolina Clinical and Translational Institute-SCTR):
  - Community Engaged Scholars Grant/Course
  - Partnering with CCSD to collect and catalogue BMI data into a central data base
  - Obesity Summits
    - October 2012- Scientific Retreat
    - December 2012- Community Forum-Conquering Tri-County Obesity



- Collaborative expansion of BCCW Wellness Checklist/Initiative to Bamberg County School Districts 1 and 2
- Dr. Melissa Henshaw and Janet Carter: (Heart Health)
  - Boeing Center for Children's Wellness
    - Formed 3 years ago to include prevention and treatment of obesity in clinical as well as community and schools settings
    - Website development and promotion of health & wellness with links to each others initiatives/events/resources
  - Numerous Health Fairs in both community and schools
    - St. Stephens Elementary in Berkeley County (2012)- impacting > 200 families
    - CCSD First Day Festival (2012 & 2013) - impacting > 2000 families
    - CRBR Expo (2011-2014)- developed nutrition games to identify best fast food and sugared beverages; impacting > 1000 participants
    - Children's Museum of the Low Country "Fam Jam" (2011-2013)- impacting > 500 families
    - Boeing Family Day (2013 & 2014)- impacting > 8000 employees and family members
  - Bridge Walks
    - Conducting and Promotion of our Bridge Walks (2010-2014)- impacting > 500 participants each year
    - McFadden Family- HH participants who learned of our walks via HH and brought their son who is in treatment as well as 5 other family members- while on the bridge they connected with Lean Team and a young AA boy who had lost 60 pounds, graduated high school and eligible to enroll in Merchant Marines (we provided letters of recommendation)- example of mentoring, encouragement and life change as result.
- Dr. Scotty Buff: (Jr. Doctors of Health)
  - Schools sub committee formed and met bi-annually to discuss project experiences, evaluation, goals and methods, and areas of overlap and synergy.
  - Overlap/Reinforcement of Health and Wellness in Burke High School JROTC students
  - Promote and link their JDOH to our Boeing Center School Wellness Checklist by offering points to schools for nutrition/physical activities with families
- Dr. Marvella Ford and Dr. Debbie Bryant: (Compass Healthy Communities Project-Hollings Cancer Center)
  - Linked with Eat Smart Move More to provide nutrition and physical activity information to 100 participants at community conference titled "Laughter, Living and Lifestyles".
- Dr. Pat O'Neil and Josh Brown: (MUSC Weight Management Center)
  - Linked their LEAN program with appropriate contacts in the schools and distributed their materials to the school wellness contacts

### **Non-Research Activities:**

During the SE VIEW project period (2010-2014) we expanded our efforts to improve the health of children, families and teachers in schools and communities to include two additional school districts in Berkeley and Dorchester Counties both of which have higher than state and national averages of obesity rates. We used our partnerships with South Carolina DHEC Lowcountry (formerly Region 7) and Trident United Way to expand our wellness initiative to Berkeley County School District (BCSD) and Dorchester 2 County School District (D2SD). We have experienced rapid adoption of our BCCW SWC model in these counties with increased participation each year (82% CCSD, 54% BCSD, 100% D2SD). These efforts have led to policy, systems and environmental changes that are positively affecting the health of the school-based community. Highlights include:

- Training school and community partners on BMI measurement, and provision of age-adjusted BMI charts to improve the quality of BMI data collected by the schools (2010-2014)- impacting 84 schools, 40,000 students
- Implemented a MUSC/SCTR Community Engaged Scholars mini-grant with CCSD (2013-2014) to evaluate our School Wellness Checklist (SWC) initiative and assist in the collection of and storage of BMI school data into a single database housed at CCSD.
- Maintaining a website, Facebook page and Twitter accounts (2011-2014) that provide a myriad of resources for teachers, physicians, adults and children that encourage continued commitment to healthy behaviors.
- Established and continuing a Blog (2013-2014) for tri-county area schools and Doc's Adopt physicians to facilitate communication and sharing of nutrition, physical activity, PSE and school health improvements- impacting > 113 schools in 3 counties.
- Continuing a partnership that resulted in a 3-year broadcasting campaign (2012-2014) involving five local radio stations to improve the exercise and eating habits of local residents- impacting > 300,000 area residents
- Establishing a new partnership through Eat Smart Move More Charleston Tri-County with a local TV network (WCSC-channel 5) to promote healthy eating and active living to the community- impacting > 300,000 area residents
- Development, implementation and replication of BCCW School Health Initiative: SWC tool & Doc's Adopt (2010-2014)- (82%) of CCSD schools, (54%) of BCSD schools and (100%) of D2SD schools to implement policy and environmental changes at both the district and individual school level- impacting > 80,000 students, staff & families
- Development, implementation, replication, expansion and continuing of our "Doc's Adopt" program (2011-2014) that trains and pairs physicians with CCSD schools and expanding to D2SD in August 2013- impacting 75 schools
- Continuing a School Lunch Improvement Initiative by working with CCSD, BCSD and D2SD to develop healthier Ala-carte foods and implementation of USDA Smart Snack guidelines (2012-2014)- impacting 113 schools in 3 counties
- Development and continuing distribution of a monthly health newsletter highlighting bridge walk activities and encouraging healthy eating and active living- impacting 500 area residents each year
- Implementation of CDC School Health Index Training in collaboration with SC Department of Education (2013 & 2014)- impacting 30 schools in 3 counties
- Continuing of Lean Team Bridge Walks. (2007-2014)- impacting > 500 participants each year, logging almost 50,000 miles
- Implementation of CRBR Annual mini-grants for promotion of regular physical activity (2010-2014)- Continuation of an active living initiative for teachers by partnering with Coastal Community Foundation to support the training and participation of school employees in CCSD, BCSD, D2SD as walkers/runners in the annual 10K Cooper River Bridge Run
  - Individual grants for training and entry in annual CRBR runs- impacting > 60 participants each year
  - Encouraging and assisting schools to apply for CRBR grants- impacting > 18 schools, 1800 students and teachers from 3 school districts
- Developed, implemented and continuing a community based donation campaign "Support the Girls" (2013-2014) to eventually outfit all JROTC girls in CCSD schools with a high quality, properly fitted sports bra- impacting to date 159 girls in 3 high schools

### **Individual Assessment - BMI collection in schools:**

South Carolina Student Health and Fitness Act of 2005 (updated in 2013) recommends that schools measure BMI's in fifth grade, eighth grade and once in high school for Fitness Gram reports.<sup>22</sup> These measurements are conducted by physical education teachers and school nurses. We are continuing our effort to assist schools with BMI collection since learning two years ago that BMI measurements were often inaccurate because schools lacked quality, reliable equipment; that students were often not asked to remove shoes or extra layers of clothing and contents of their pockets prior to height and weight measurements; that some schools were not using age-adjusted BMI charts in their measurement collection and that no single data base or collection protocol existed in the majority of school districts and/or within the SC department of education. As part of our SE VIEW Lean Team project, we distributed high quality BMI stations (digital scale, stadiometer and body fat analyzer) to 11 CCSD high schools to facilitate future BMI collections in that district. In addition, we hold district wide BMI trainings detailing the proper techniques and risks associated with assessment of weight status in children. We also regularly update our website ([www.musc.edu/leanteam](http://www.musc.edu/leanteam)) with relevant resources for our school partners. In addition, applied for and received a mini-grant through MUSC's Community Engaged Scholars program with CCSD to capture BMI data in a single data base housed within the school district which is being looked at as a potential model for statewide collection.

### **Website/ Social Networking:**

Our website was developed in 2007, maintained and updated under support from the SE VIEW project and continues to be a widely used resource for teachers, physicians and families. ([www.musc.edu/leanteam](http://www.musc.edu/leanteam))

### **School Health Initiative:**

During the SE VIEW project period we were fortunate to apply for and receive additional funding from the Boeing Company to continue our non-research school-based wellness initiative. This partnership has increased capacity and sustainability of our model, which has been rapidly adopted by 3 SC counties and has garnered greater than expected interest, from 11 more counties in the state. We do not currently have sufficient funding to implement our SWC and Doc's Adopt model in all of these communities but are seeking funding for replication and expansion.

- Our partnership with the Boeing Company continues under the MUSC Boeing Center for Children's Wellness (BCCW-formerly named: Boeing Center for the Promotion of Healthy Lifestyles in Children and Families; Lean Team) and they have committed 2 more years of funding (through December 2016) for a limited expansion, with annual approvals required.
- We continue to revise our BCCW SWC tool based on nutrition and physical activity best practice models and are partnering with Alliance for a Healthier Generation (AHG), South Carolina Department of Education (SCDE) and the Healthy South Carolina Initiative (HSCI) to include items on the checklist that will help schools achieve national recognition for their efforts.

Established and supported Wellness Achievement Celebrations (WAC) in the 3 counties participating in our school health initiative. Qualifying schools present lessons learned and success stories and receive wellness achievement awards (\$1000 each). 113 schools received awards this year.

In addition, we continue to train and recruit physicians for our "Docs-Adopt" program (established in November 2010) to serve as a resource for the school wellness councils. This program led to adoption of 95% of CCSD and 68% of D2SD and 5% of BCSD schools. Both CCSD and D2SD have formalized county medical societies; suggesting that a strong network of physicians is needed for successful expansion of the program into other communities. Regardless, those schools in all 3 counties that were adopted by physicians made more PSE changes and earned higher points on our SWC checklist.

### **Community Outreach:**

- **Bridge Walks:** In 2007, prior to the SE VIEW project, we began a community outreach effort to encourage residents to lead healthier, more active lives. We offered a free, open to the public, bridge walk across the Arthur Ravenel, Jr. Bridge from Charleston, SC into Mt. Pleasant, SC. Participants could walk 1-5 miles, log their miles, receive t-shirt and a newsletter. Support from SE VIEW and Boeing Company has allowed us to continue these walks on a now monthly basis. The more than 500 participants have logged nearly 50,000 miles.
- **Media campaign:** An effort to reach deeper into the community with obesity prevention and treatment strategies has led to a continued partnership with two local broadcasting companies; Cumulus Broadcasting made up of 5 radio stations reaching over 300,000 listeners in the tri-county area and WCSC-TV that reaches over 500,000 viewers in the tri-county area. The partnership came about through Eat Smart Move More Charleston Tri-County (ESMMCTC)- a local chapter of our state organization. Both companies are committed to encouraging area residents to improve their health. These partnerships provide SEVIEW members and other community partners an opportunity to contribute their expertise by appearing as guests and acting as a resource to the stations. Listeners and viewers are encouraged to increase physical activity and eat healthier. Information discussed during the broadcasts are added to the ESMM CTC website ([www.esmmsc.org](http://www.esmmsc.org)) and are available to the public.

### **Community Synergies/Partnerships:**

- Capacity building
  - JROTC instructors and students in Charleston County School District
    - Shared JROTC study results, provided training and equipment for BMI measurements during 2-hour site visits with 11 high schools.
    - Capacitated school to collect/monitor/evaluate BMI/Body Fat data by providing training, a stadiometer, digital scale and hand-held body fat analyzer to the school.
    - Increased awareness of overall district and school wide wellness initiative by connecting JROTC instructors and students with their school wellness leaders.
- Continued School Wellness Initiative expansion into other SC counties
  - 84 Charleston County School District schools (2010-14)
  - 41 Berkeley County School District schools (2012-14)
  - 22 Dorchester 2 County School District Schools (2012-14)
  - 11 other counties submitted RFP's to BCCW for expansion funds (2014)
  - Provided technical assistance to LiveWell Greenville in Greenville County (2012-13)
  - Co-lead effort to establish a Healthy Schools Network across the state as a forum/entity to share best practices, lessons learned and compile resources (Initial Planning Meeting held May 30, 2013-attended by 23 people from 20 organizations working on implementation of HEAL strategies/policies in schools such as MUSC Boeing Center for Children's Wellness, Eat Smart Move More SC, SC School Nutrition Association, SC DHEC central office and lowcountry, Southeastern United Dairy Industry Association, Alliance for a Healthier Generation, LiveWell Greenville, and Piedmont Health Foundation.
- Sustainability Plan
  - Engage community partners in the school wellness efforts
    - Established communication/outreach to local community businesses to provide a forum (Wellness Achievement Celebration) for businesses to engage and be recognized for improving school health environment
  - Seek new funding or in-kind support from private sector and governmental agencies
    - Evaluate effectiveness of model
    - Publish findings

- Apply for all grants relative to scope of work: improve school health environment
  - Consider developing a formal fundraising strategy
- Advocacy
  - Continue to advocate for strategies that will impact the prevalence of obesity
    - Unified! A Voice Against Obesity: February 21, 2013 at SC DHEC (<http://www.scdhec.gov/scobesity/>)
    - Increased awareness and engaged leaders and provided testimony to support proposed SC-S 599 Healthy Student Act of 2013 ([http://www.yaleruddcenter.org/resources/upload/docs/what/policy/legislation/SC\\_SB\\_599\\_Healthy\\_Students\\_Act\\_of\\_2013\\_Shealy\\_4\\_11\\_13.pdf](http://www.yaleruddcenter.org/resources/upload/docs/what/policy/legislation/SC_SB_599_Healthy_Students_Act_of_2013_Shealy_4_11_13.pdf))
    - Update Pentagon staff and Congressman Clyburn's office to share importance of our JROTC study results and to encourage support of school wellness efforts
    - Joint Legislative Committee on Children's Health- testify as needed (2012 & 2014)
    - Service on SC Obesity Council charged with development of new 5 year state obesity strategic plan

### **B3b. Community Engaged Scholars Initiative (CES)**

**Director:** Carolyn Jenkins, DrPH, Professor for the College of Nursing

**Goal:** Increase the capacity of academic-community partnerships capable of conducting research in non-traditional settings with mutual ownership of the processes and products.

**Distinguishing Characteristics:** CES provides training, pilot funds and mentorship for teams consisting of an MUSC researcher and community partner(s) who have collaborative interests in community-based participatory research (CBPR) to eliminate health disparities. CES will help bridge the gap between clinical practice and community health needs.

The Community Engaged Scholars Program (CES-P) is an education and training initiative of the South Carolina Clinical & Translational Research Center for Community Health Partnerships (SCTR/CCHP) at the Medical University of South Carolina (MUSC). This program provides training, pilot funds, and mentorship for research teams, consisting of academic and community partners who have interests in community-based participatory research (CBPR). The goal of this program is to increase the capacity of academic-community partnerships to conduct research with mutual ownership of the processes and products, and ultimately to improve the health of our communities in South Carolina and beyond.

CES-P teams consist of a at least one community partner and one academic partner. A community partner is defined as an individual(s) who maintains a primary affiliation, whether employed or volunteer, with a community organization. For the purpose of this program, *community organization* is defined as an organization that:

- Has a documented interest in improving the health of the relevant community (e.g., a mission statement)
  - Has a history of serving the health needs and interests of the relevant community.
- These organizations may include, but are not limited to public schools, community-based organizations, faith-based organizations, and/or advocacy groups. An academic partner is defined as an individual(s) with a faculty appointment in a research area at MUSC.

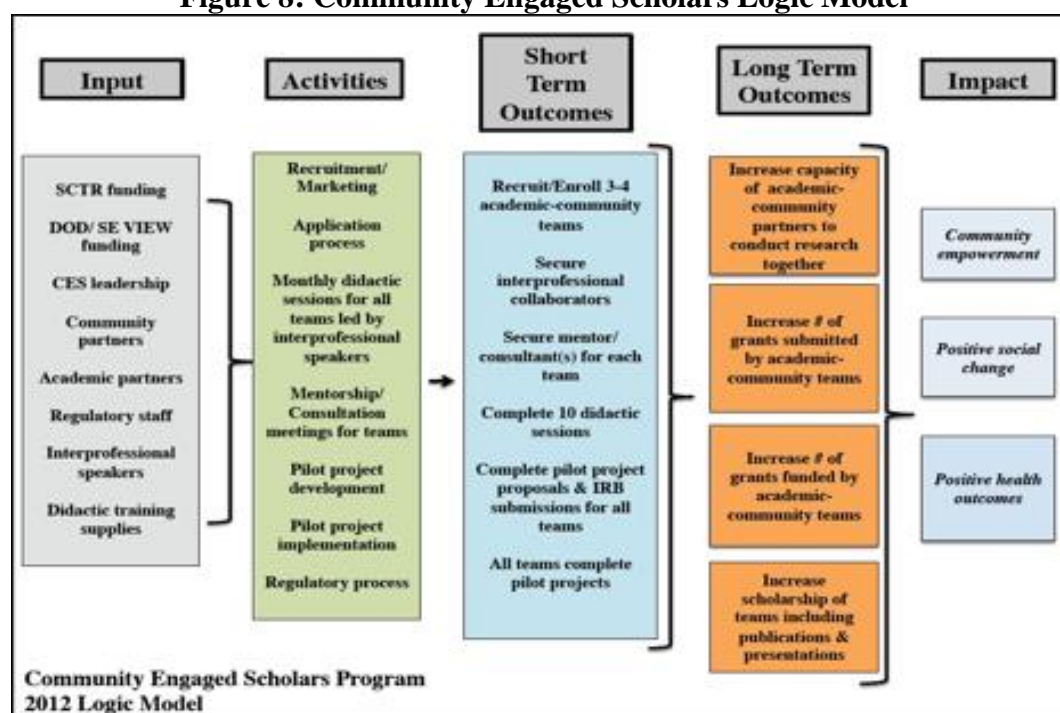
After successfully completing the program, CES-P participants are expected to meet the following competencies:

- Understand the concepts and components of CBPR
- Apply CBPR principles in the conduct of research

- Incorporate CBPR principles and approaches in grant proposals
- Demonstrate CBPR efforts in a career portfolio
- Communicate with audiences in both community and academic settings about CBPR principles and components
- Implement a pilot CBPR initiative

The CES-P logic model is shown in **Fig. 8**.

**Figure 8: Community Engaged Scholars Logic Model**



A call for applications for the Community Engaged Scholars Program (CES-P) was sent out in January 2014 and an informational session for interested candidates was held on January 27, 2014. Applications were due on February 21<sup>st</sup> and 6 applications were received. All teams submitted applications, which were reviewed by an academic as well as a community reviewer and were selected based on the strength of the partnership and the potential for continued research funding. The fifth cohort of the CES-P was selected on March 14, 2014. **Table 8** lists the scholars and their research topic and/or project.

**Table 8: Cohort 5**

**Community Engaged Scholars Cohort 5:**

Team	Community Partner	Academic Partner	Research Topic/Project
1	Dee Norton Lowcountry Children's Center (Elizabeth Ciesar)	MUSC College of Medicine, Department of Psychiatry and Behavioral Sciences (Lisa Jobe- Shields)	Improved identification of caregiver mental health problems as a promising avenue for improving child outcomes following abuse and neglect.
2	People Against Rape (Liana McNallan) and The Citadel (Janet Shealy)	MUSC National Crime Victims Research and Treatment Center, Department of Psychiatry and Behavioral Sciences (Joah Williams)	Evaluation and implementation of an evidence-based sexual assault prevention program that targets the male population on college campuses in Charleston County.
3	Low Country Food Bank (Dana Mitchel)	MUSC Department of Pediatrics (Adebawale Odulana)	Assess the perceptions and thoughts of underserved populations regarding obesity in order to improve community based obesity interventions in Charleston County.
4	Appalachian Council of Governments/Area Agency on Aging (Karen Carter)	Clemson, Department of Food, Nutrition, and Packaging Sciences (Angela Fraser)	To determine the feasibility of implementing a CNS manager- facilitated nutrition education intervention through the congregate nutrition system in SC.

The didactic portion of the program began on March 21, 2014 and included the following weekly sessions:

Friday, March 21	CBPR History & Science
Friday, March 28	Partnership Readiness Workshop – Part 1
Friday, April 4	Partnership Readiness Workshop – Part 2
Friday, April 11	Partnership Readiness Workshop – Part 3
Friday, April 18	Problem Identification, Community Needs Assessments, Research Frameworks & Theory
Friday, April 25	Ethics & Institutional Review Boards (IRB)
Friday, May 2	Grant Writing Workshop I
Friday, May 9	Grant Writing Workshop II
Friday, May 16	Feasibility & Pilot Testing
Friday, May 23	Formative Research, Intervention Development & Pilot Testing
Friday, May 30	Evaluation
Friday, June 6	Data Collection, Analysis, and Presentation of Data
Friday, June 13	Translation & Dissemination
Friday, June 20	Academic-Community Partnership Panel
Friday, June 27	Group Presentations

All live sessions will be delivered virtually using Adobe Connect to allow community and academic partners outside of area to attend the session.

A REDCap survey was developed and sent out to 47 past CES-P participants. The survey will capture short-term and long-term outcomes of each team. Information relating to recent publications, community and academic presentations, grant submissions and grants awarded, awards received, and other relevant information was sought in order to assess a return on investment. Twenty-five of the 47 evaluations have been returned thus far and we are currently following up with the PIs of those that have not been returned in order to get more substantial feedback.

### **Program Evaluation**

To evaluate CES-P, a modified RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework has been used, which maximizes the potential for broader dissemination of the program. For the fourth cohort, the evaluation questions and evaluation timeline have been restructured to fit within the RE-AIM framework. Additionally, the design of an in depth evaluation of CES to determine overall success for all cohorts is currently underway. The current design includes:

- **Reach**  
To evaluate reach of the CES-P, we monitor: number/types of participants that: a) inquire about the program (via phone, email, and/or information sessions) and their representative organizations; b) apply for the program and their representative organizations; c) are selected, including organizations, areas of health interest, experience in CBPR, and previous history/experience with CBPR partnerships. Beginning with Cohort 4, we plan on also determining the populations that have been served by CES-P Teams, as well as the geographic areas covered.
- **Effectiveness**



Effectiveness is reflected at two levels: the dyad level and the program level. In order to assess the effectiveness of each session at the program level, participants are asked to complete a standardized reporting form, developed using the Research Electronic Data Capture (REDCap) database and survey system, after each session to assess their thoughts on the session content, expertise of speakers, usefulness etc. Participants are also asked to complete a mid-term evaluation, and an overall evaluation of the program to assess knowledge, attitudes, behaviors, usefulness, satisfaction etc. Research electronic data capture (REDCap) (ref.), a web-based database system, was used to develop these evaluation tools [ref.]. We are currently in the process of expanding the evaluation of effectiveness to include an evaluation of the dyad's level of impact on policies, health, processes, the environment, health outcomes, and systems. We also plan on calculating the return on investment for the CES-P. We plan to continue using the existing tracking system of standardized reporting forms and logs and plan to continue our longitudinal follow-up of teams. We will assess the dyad's progress with their partnerships by documenting products such as grant submissions, grant funding, and dissemination activities (local, regional, state, national and international).

- Adoption  
In the case of the CES-P, “adoption” is reflected in measures of impact effectiveness at the dyad level. We use Green's Guidelines for Participatory Research<sup>23</sup> to review the CES teams pilot proposals.
- Implementation  
Delivery of the CES-P components is evaluated using a treatment fidelity strategies checklist, including videoconferencing delivery, attendance, online module access, use of mentors, apprenticeship activities, use of SUCCESS Center, SCTR vouchers, and applications for SCTR pilot funds. During the coming months, we will conduct interviews with consulting faculty, partners, and participants on successes, challenges, barriers to the implementation, and recommendations for sustainability.
- Maintenance  
Maintenance is reflected at two levels: the dyad level and at the program level. We will monitor if adherence with the program components occurs over time, and if the partners maintain their collaborative working relationship. We will also investigate if either partner or dyad undertakes additional CBPR initiatives post-training, the sustainability of the partnerships/products, evidence of policy change, and social and health impact.

### **B3c. Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)**

**Director:** Marvella E. Ford, PhD, Associate Professor, Hollings Cancer Center,

**Goal:** Reduce disparities in cancer services access, morbidity and mortality in the I-95 Corridor with a focus on three common cancers occurring to a disparate degree in the SE VIEW regions: breast, cervical and prostate.

**Distinguishing Characteristics:** An I-95 Corridor Health Advisory Committee provides advice and program review, identifies community agencies/health centers to be partners for MOVENUP, and identifies service locations for the mobile unit. Students from three HBCUs participate in cancer education programs and cancer disparities research training.

Cancer is a major public health problem in South Carolina. Current estimates are that 1 in 2 men and 1 in 3 women in South Carolina will develop cancer at some point in their lives. Three of the most common types of cancer death in South Carolina are cervical, breast and prostate cancers. Breast cancer is the most commonly diagnosed cancer among women in South Carolina and accounted for 16% of all cancer deaths in women between 1996 and 2001. Breast cancer mortality is 1.5 times higher in African

American women than in Caucasian women in South Carolina. South Carolina ranks 3<sup>rd</sup> in the US in new cases and 8<sup>th</sup> in deaths of cervical cancer. South Carolina ranks 3<sup>rd</sup> in the nation in prostate cancer deaths.

In South Carolina's I-95 Corridor Counties, cancer mortality rates are even higher than in the rest of the state. Our programs focused on the geographic area bounded by the 200-mile stretch of the I-95 highway that crosses South Carolina; in particular; the counties of **Clarendon, Colleton, Dorchester, Orangeburg, Sumter, and Williamsburg**. These are some of the most socially and economically disadvantaged counties in the nation. They experience persistently high levels of poverty and high rates of premature mortality due to undetected, untreated, and under treated chronic disease.

The chronic diseases we addressed are three common cancers occurring to a disparate degree among the residents of the I-95 Corridor counties: breast, cervical, and prostate cancer. The long-range goal of the mobile outreach yan, educational, and navigation health services for underserved populations (MOVENUP Program) is to reduce disparities in cancer services access, morbidity and mortality.

The I-95 Corridor represents a vital opportunity and a valuable resource for improving health outcomes and fostering economic development. The state's highest concentration of negative statistics is found here: high rates of chronic health conditions, high unemployment rates and poverty levels, and low rates of educational achievement.

**Rationale for Geographic Area Selected:** The I-95 Corridor encompasses counties that experience persistently high levels of poverty and high rates of premature mortality due to undetected, untreated, and under treated chronic health conditions. These are some of the most socially and economically disadvantaged counties in the nation.

**Rationale for Chronic Diseases Targeted:** The MOVENUP Program demonstrates a creative and effective new model of health outreach and service delivery in rural communities. Through the MOVENUP Program, the health needs of a wide range of rural population groups including, but not limited to, low-income populations, minority populations, and populations experiencing chronic health conditions will be met. Disparities in the incidence and treatment of cancer have a significant impact on economic growth and quality of life in South Carolina's rural and minority communities as well as their military readiness.

**Task 1.** Provide mobile health unit services and patient navigation services.

- The mobile health unit screening and patient navigation services have concluded.

**Task 2.** Provide cancer education awareness and education related to nutrition/physical activity to the identified I-95 Corridor counties.

- The MOVENUP Project investigators obtained intramural funds to support a new study focused on improving physical activity among women in South Carolina are breast cancer survivors. The study is titled the Getting Onboard with an Active Lifestyle to Reduce the Risk of Breast Cancer Recurrence Study (GOAL Study). The time period immediately following completion of acute care (i.e., surgery, chemotherapy and radiation) for a new breast cancer diagnosis represents an interval when patients transition to breast cancer survivors. During this transition period, patients often re-evaluate their health status and initiate lifestyle changes to improve their overall health and their breast cancer outcomes in particular.
- The proposed study is a feasibility test of an intervention to enroll overweight and obese female breast cancer survivors into a 12-week cancer rehabilitation intervention to increase their physical activity and improve their diet. The intervention will have a follow-up period of one year. Data from the feasibility study will lay the foundation for a planned NIH/NCI R01 grant

examining the impact of increasing physical activity on reducing inflammatory biomarkers associated with breast cancer recurrence (PAR-12-228). The feasibility study will serve as a proof-of-principle study for the R01 grant application.

- The GOAL Study has received MUSC IRB approval and will begin enrolling participants in March of 2014.

**Task 3.** Develop a cancer research-training program with students from the following Historically Black Colleges and Universities (HBCUs): Claflin University, South Carolina State University, and Voorhees College.

- The MOVENUP Project team will lead a Student Forum Committee at the 8<sup>th</sup> Annual National Conference on Health Disparities that is scheduled for November 2014

### **B3d. Health Empowerment Zone**

**Director:** Deborah Williamson, DHA, CNM, Associate Dean for Practice; Assistant Professor, College of Nursing

**Goal:** Develop and validate an inclusive academic/community partnership in North Charleston, SC addressing neighborhood-level characteristics related to availability of healthy food and physical environments.

**Distinguishing Characteristics:** Combines high tech healthcare and ‘high touch’ community engagement, education and empowerment; has dual focus on rapidly growing Hispanic and historically underserved African American populations; creates 360° partnership embracing health practice, contractual arrangements, health policy task forces and research.

The Health Empowerment Zone (HEZ) promotes individual, systems, and policy changes to create and enable a culture of healthy eating and active living thereby reducing childhood obesity and preventing obesity-related conditions. The purpose of the project is to engage the North Charleston community in creating a safe access to a healthy lifestyle that includes healthy eating, active living and a clean environment where people live, learn, work and play. Community members and top-level leaders in all community sectors will collaborate to implement policy and environmental strategies to create sustainable, healthy communities.

**Goal 1: To develop an inclusive and effective academic/community partnership in North Charleston to address neighborhood level characteristics related to the availability of healthy food to reduce obesity.**

Objective 1: To identify key partners reflecting the diversity, expertise, and community involvement required promoting healthy eating and active living in North Charleston.

- Activities
  - Offered workshops to provide information on healthy eating and active living
    - January 7-8, 2014: Loving Yourself: How to Maintain a Healthy Family
    - January 21-22, 2014: How to Make Healthy Snacks for Your Children
    - February 18-19, 2014: Child Safety: How to Keep Your Children Active and Safe

Objective 2: In collaboration with the Achieve grant team, a complete needs assessment of systems, environments, and policies that affect healthy eating and active living to create a community action plan using the CDC CHANGE Tool for North Charleston.

- The CDC Change Tool was used to monitor changes in the community in the area of policy, systems, and environmental change. A two-year review was completed in August 2012. The assessment included nutrition, physical activity, tobacco cessation, and chronic disease management.
- In addition to the Change Tool, a windshield survey, a convenience store audit for healthy foods, and a neighborhood checklist were completed to inform findings. Significant findings after two years included more policies addressing healthy food options at public events and

community organizations such as churches and schools. The establishment of wellness committees in schools, and a wellness checklist developed by Charleston County School District for implementation in the schools were other examples of policy and environmental changes. State physical activity minutes for students enrolled in public schools were already established at the beginning of the grant, but compliance with guidelines has increased in targeted schools in North Charleston. Although communities around North Charleston passed no smoking ordinances, the mayor of North Charleston continues to refuse to support a no smoking policy as a municipal ordinance.

- Chronic disease management activities have been promoted by the faith based organizations within the community. There has been no increase in private industry (weight watchers, gyms, or other exercise classes) in the community. North Charleston remains a community with a significant number of residents live below the poverty level.

## **Goal 2: Creating a Movement**

Objective: To collaborate with the community (neighborhood associations, schools, worksites, and faith based organizations) to provide a quarterly event promoting healthy eating and active living that may include recreation, education and/ or screening in each of the high school attendance zones in North Charleston.

- Activities
  - Community-based programs on healthy eating/active living annually that promotes food literacy and may include community recreation, education, and screening for blood pressure and other biomedical markers such as lipid and glucose screening, and BMI calculations.
    - February 15, 2014: Community health fair in North Charleston, SC
      - Provided health screenings to 50 community members (including blood pressure, cholesterol, glucose, and BMIs) as well as information on healthy eating/active living. Worked with community members to sell fresh fruit at the fair to help raise money for the April nutrition conference that community members are organizing with support from HEZ staff.
    - February 24, 2014: Planning meeting for the community nutrition conference
      - HEZ coordinators attended a planning meeting with the PASOs promotoras to discuss strategies for the April community nutritional conference. Two CON students attended the meeting to introduce themselves and their expertise about ways in which they can help the promotoras become more knowledgeable about nutrition topics for the upcoming conference. They will be working closely with the promotores to help them gain the knowledge and skills needed to conduct their own workshop at the nutrition conference. They distributed a survey to determine what content the promotores would like them to cover in the next meeting concerning nutrition.
    - March 14, 2014: Promote the healthy cookbook and the upcoming April nutrition conference to the Hispanic community at the Ladson Flea Market
      - The Ladson Flea Market has multiple fresh fruit and vegetable vendors and serves large numbers of Hispanic families who live in North Charleston. Over 6000 people visit the 3-day market each weekend. The promotores will be passing out flyers containing information about the upcoming conference and registering people that are interested in attending.
    - March 21, 2014: Planning meeting for the community nutrition conference

- Partner with the North Charleston Spanish media to promote healthy eating as part of a community education campaign.
  - El Informador, a Spanish Newspaper in the Charleston area, has been printing the recipes and promoting the recipe book on a monthly basis since September.
  - El Informador as well as the Spanish radio station will make announcements and promote the upcoming April nutrition conference.

### **Goal 3: To increase availability and accessibility to healthy foods in North Charleston**

Objective: To increase the availability of healthy foods to residents of North Charleston by creating new policies, and new sources of healthy foods.

- Increase knowledge about federal food assistance programs and eligibility requirements and provide referrals to federal food assistance programs
  - Dissemination of information in community settings
  - Referrals to federal food assistance programs
    - 5 referrals were made for enrollment in federal food supplement programs this quarter. Follow-up phone calls are scheduled for April 2014 to confirm enrollment
- **Food Insecurity Survey**
  - Program Coordinator initiated a project that examined food insecurity among the local Hispanic population. Using the publicly available USDA food security survey, preliminary data was obtained from the administration of the survey to 15 Spanish-speaking community members. The survey examined the availability and usage of federally funded food programs among Hispanics. Nationally, as well as locally, the Hispanic population has lower enrollment in these programs that are designed to increase food security. The research project gathered local baseline data in order to collaborate with local agencies to promote enrollment in federal supplemental nutrition programs.
- **Mini-grants for Urban Gardens**
  - Clemson Extension and The City of North Charleston, Department of Recreation in collaboration with Healthy North Charleston and the Health Empowerment Zone, installed three community gardens in North Charleston between September 2011 and August 2012. A mini grant provided by Healthy North Charleston provided the financial support for the development of the gardens. These community gardens are located at Minor Crosby, Charleston Farms and Felix Pinckney Recreation Centers. While each of the gardens was designed to fit the needs of the individual community, they are united by the same guiding principles including:
    - Promoting physical activity and quality outdoor experiences
    - Motivating kids to eat more fruits and vegetables
    - Providing opportunities for hands-on learning, inquiry, observation and experimentation
    - Offering active and engaging connections to academics, from science and math to nutrition and literacy utilizing the Junior Master Gardener Program materials and workbooks
    - Building an understanding of and respect for nature and our environment
    - Teaching kids to nurture and care for living things while developing patience
    - Giving children a sense of pride in their accomplishments
  - All of the gardens were designed to be site specific, low maintenance and utilize best garden management practices. Designed for educational outreach in the communities they serve, these gardens are jumping off points for adult and youth gardening education.

### **B3e. Healthy People in Healthy Communities**

**Director:** Marilyn A. Laken, PhD, Professor of Nursing and Medicine; Frank Clark, PhD, Professor, Vice President for Information Technology and CIO

**Goal:** Promote awareness of risk factors for chronic disease, behaviors to achieve healthy lifestyles, and access to effective healthcare and necessary medications as keys to lifelong health promotion and disease prevention.

**Distinguishing Characteristics:** Engages in community dialogues about ongoing needs and resources; provides health education and small grants for local programs; supports health screening/referral for care; assesses and overcomes barriers to obtaining healthcare and medications; strengthens local healthcare delivery network; builds local capacity for sustainability; promotes and assists adoption of electronic medical record (EMR) systems and HIT.

The objective of this project is to increase preparedness for military and civilian service and pursue the vision of 'Healthy People in Healthy Communities' through awareness, education and outreach efforts. The focus is to establish (i) healthy lifestyles and (ii) access to primary healthcare and medications to promote the prevention, detection, treatment and control of major chronic diseases. Achieving this goal involved reaching people where they live, work, worship, learn and receive health care; we focused on collaborative efforts that would allow us to interact with ongoing established activities within churches, schools, worksites and medical clinics or practices. The most important achievement is to have developed a strong relationship and trust with community members (stakeholders, leaders, residents) through collaborative discussions, education, awareness, understanding and respect of their beliefs and health interests. Their active participation and involvement during the past 4 years have proven to be important and effective in adopting and sustaining healthy programs once grant funding expires. The SE VIEW team has been active in working with stakeholders to create an asset map of a wide variety of resources throughout Williamsburg County. We anticipate this resource will be very useful in maximizing program efficiency, i.e., matching needs and resources, not only for the duration of this project but also in the future years. It is part of equipping and resourcing the County for sustainable success.

Approval from Institutional Review Board (IRB) took longer than expected. As a result, we could not engage in screening and referral efforts that included capture of personal health data as we hoped. However, since several stakeholders were already engaged in some planned events, we provided technical support and expertise whenever and wherever possible without engaging in data collection. While awaiting regulatory approval, the team has been busy, Drs. Egan and Laken discussed the approach to creating a Williamsburg County asset map composed of local resources geocoded that would assist all stakeholders, build local capacity to improve health and sustain local efforts. Mr. Shaun Wagner would lead the effort in development of asset tool.

The SE VIEW program is at the center of our team's long-term focus, i.e., health promotion and disease prevention across the lifespan. Consequently, we have a number of related activities, which interact dynamically with and support our work in SE VIEW. These projects include significant capture of cardiovascular risk factor data at the patient and practice level. Analyses and reporting of these data is summarized in abstract form and a list of related publications. The research has led to funded and pending applications to improve health and reduce disparities with a focus on hypertension and diabetes.

- **Who Did We Reach?**

- Churches

- Marion Missionary Baptist Church, Salters, SC (Mini-Grant recipient)
    - St. Peters Way of the Cross Church, Andrews, SC (Mini-Grant recipient)
    - Friendship United Methodist Church, Nesmith, SC (Mini-Grant recipient)
    - St. Paul UMC, Nesmith, SC; IGA Parking Lot, Kingstree, SC

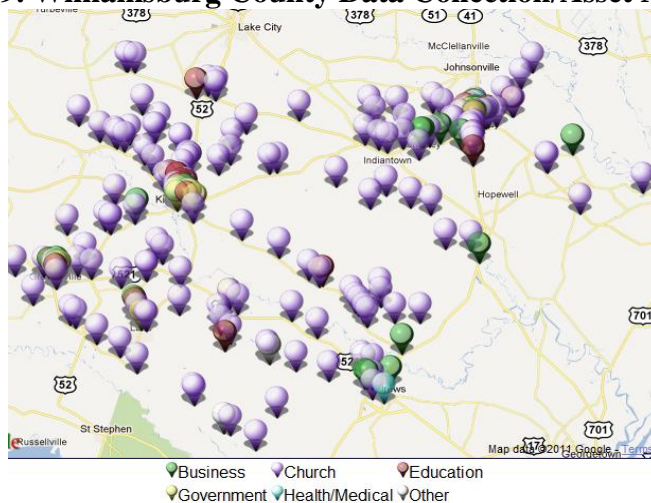
- Elijah United Methodist Church, Kingstree, SC
- Greater Bethel AME Church, Kingstree, SC
- Trinity Missionary Baptist Church, Greeleyville, SC
- Bethlehem AME Church, Hemingway, SC
- Kingstree Presbyterian Church, Kingstree, SC
- Mt. Zion United Methodist Church, Kingstree, SC
- The Ark Food Ministry, Kingstree, SC
- Bethesda UMC – Kingstree, SC
- Bethesda UMC – Cades, SC
- St. Luke United Methodist Church, Salters, SC
- Worksites
  - Trebol USA, Inc., Andrews, SC
  - Tupperware Inc., Hemingway, SC
  - Palmetto Synthetics, Kingstree, SC
  - Farmer's Telephone Cooperative, Inc. (FTC)
  - Santee Electric Cooperative, Inc. (SEC)
  - Hemingway Apparel Manufacturing, Inc., Hemingway, SC
  - Don's Car Crushing, Hemingway, SC
  - House of Raeford Food Reprocessing Plant, Stuckey, SC
  - Hemingway Hardware and Supply Hemingway, SC
  - Phoenix Manufacturing and Recycling Co., Hemingway, SC
  - Stuckey Auto Parts, Hemingway, SC
  - Stuckey Brothers Farm Parts, Stuckey, SC
  - Stuckey Brothers Furniture, Stuckey, SC
  - Wilder Bros. Furniture, Greeleyville, SC
  - Kenney's Bar B Q, Hemingway, SC
  - Mishoe Oil and Propane Co., Inc., Greeleyville, SC
  - The Seafood Shack, Hemingway, SC
  - The Wise Co., Greeleyville, SC.
- Community Organizations
  - Williamsburg Regional Boys to Men Club, Inc., Kingstree, SC (Mini-Grant recipient)
  - Williamsburg Home Town Chamber, Kingstree, SC (Mini-Grant recipient)
  - Parents Anonymous of South Carolina, Inc., Kingstree, SC (Mini-Grant recipient)
  - Williamsburg County Disabilities & Special Needs Board (WCDSNB), Kingstree, SC (Mini-Grant recipient)
  - Kingstree Recreation Department, Kingstree, SC
  - Vital Aging, Kingstree, Hemingway and Greeleyville, SC
  - Trio Community Action Organization, Trio, SC
  - Williamsburg County Interagency Council, Kingstree, SC
  - Williamsburg County Salvation Army, Kingstree, SC
  - Kingstree Women's Connection Group, Kingstree, SC
  - Williamsburg County Diabetes Coalition, Kingstree, SC
  - Coastal Collaborative American Cancer Society, Myrtle Beach, SC
  - Kingstree Recreation Department Exercise Class, Kingstree, SC
  - Williamsburg County Emergency Management, Kingstree, SC
  - Alpha Kappa Alpha Sorority, Kingstree, SC
  - Williamsburg County Farmers Market, Kingstree, SC
  - Johnsonville Adult Day Care, Johnsonville, SC



- Healthcare Organizations
  - Hope Health Inc., Florence, SC
  - Pee Dee SC DHEC, Kingstree, SC
  - Williamsburg County Mental Health Facility, Kingstree, SC
  - Palmetto Primary (Live Oak), Kingstree, SC
  - Andrews Medical Center, Andrews, SC
  - Andrews Family Practice, Andrews, SC
  - Williamsburg Regional Hospital, Kingstree, SC
  - Hemingway Family Practice, Hemingway, SC
  - Kingstree Family Practice, Kingstree, SC.
  - Collaborations initiated with Morehouse School of Medicine – Atlanta, Georgia and Medical University of South Carolina, Hollings Cancer Center (MUSC)
- Schools
  - C.E. Murray High School, Greeleyville, SC (Mini-Grant recipient)
  - D.P. Cooper Elementary School - Salters, SC (Mini-Grant recipient)
  - Williamsburg County First Steps to School Readiness Partnership Board-Kingstree, SC (Mini-Grant recipient)
  - Hemingway Elementary, Middle and High School, Hemingway, SC
  - Greeleyville Elementary School, Greeleyville, SC
  - Williamsburg Technical College, Kingstree, SC
  - Johnsonville Schools, Johnsonville, SC
  - Anderson Primary School, Kingstree, SC
  - Kenneth Gardner Elementary School, Kingstree, SC
  - Kingstree Middle and Senior High School, Kingstree, SC
  - Williamsburg County Magnet School of the Arts, Kingstree, SC
  - Williamsburg Academy (Private), Kingstree, SC
  - Youth Academy Charter
- Government Organizations
  - Williamsburg County Government
  - Town of Kingstree - Kingstree, SC
  - Williamsburg County School District, Kingstree, SC
  - Williamsburg County Development Board, Kingstree, SC

Please see **Fig. 9** for a visual of the organizations we partnered with.

**Figure 9. Williamsburg County Data Collection/Asset Mapping**



[http://www.ccihealth.org/htn/se\\_view\\_map.html](http://www.ccihealth.org/htn/se_view_map.html)

### **B3f. Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population**

**Director:** Jacobo Mintzer, MD, Professor, Department of Neurosciences

**Goals:** Investigate underlying factor(s) contributing to the fact that Alzheimer's disease (AD) afflicts more African Americans than whites; develop knowledge and interventions that will help close this gap

**Distinguishing Characteristics:** SC's elderly population is diverse and largely rural, while most physicians trained to provide geriatric care are concentrated in a few urban areas. For evaluation, diagnosis and appropriate treatment for AD and other neurodegenerative diseases of aging, the situation is critical. This initiative uses telemedicine to meet healthcare needs, improve healthcare delivery systems, and ultimately reduce health disparities in rural African Americans.

The rapid and steady raise in the prevalence of dementia is a major public health problem. This is especially true for South Carolina, where, according to the 2007 Annual Report of the SC Alzheimer's Disease Registry<sup>24</sup>, the number of dementia cases is expected to increase from approximately 50,000 in 2005 to over 90,000 by the year 2030. South Carolina is home to a large African American elderly population concentrated primarily in rural areas. This population suffers from a lack of access to healthcare and is largely under-served medically. South Carolina follows national trends, with a higher prevalence of African Americans suffering from Alzheimer's disease when compared to White Non-Hispanics<sup>25-29</sup>. Despite the high prevalence rate among African Americans in South Carolina, however, very few African Americans are diagnosed and treated. Many of these issues are related to practical issues, such as difficulties in reaching diagnostic and treatment centers, and emotional issues, including lack of ability of the local trusted medical team to provide diagnosis and treatment for Alzheimer's disease, and the natural reluctance of the elderly subjects who have learned to be suspicious of the medical system after a lifetime of discrimination. Thus, we have focused our effort on the development of new methodology to diagnose subjects in their own environment, using telemedicine as a tool to overcome both the practical and emotional barriers to access to healthcare. Specific Aims for this project:

- To evaluate the feasibility of using "Telemedicine," or video-conferencing, for evaluation and diagnosis of African Americans suffering from Alzheimer's disease and other cognitive disorders.
- To explore the validity and reliability of this approach in the targeted population and determine its applicability in clinical practice by comparing Telemedicine diagnosis of Alzheimer's disease with in-person diagnosis of Alzheimer's Disease.

Expectations are that telemedicine video-conferencing will allow patients to be diagnosed accurately and reliably from their primary care physician's office via specialist in a diagnostic and treatment center. In addition the project will provide through town-hall meetings, knowledge to health-care professionals and African Americans in rural communities in South Carolina about AD and this novel approach to diagnosis. Finally, it is expected to serve in developing a practical, standardized process for using telemedicine to diagnose Alzheimer's disease that can be implemented statewide and ultimately on a national level. Ultimately, this project improved the ability for African-Americans living in a rural community to seek medical evaluation of dementia-related symptoms.

For many rural, African-American residents, access to specialized care is limited due to distance and socio-economic factors. The design of the project was built on the assumption that clinical practices would be interested in receiving help in providing diagnosis of AD or dementia and that the practice would be receptive to obtaining guidance in how to serve this population. Our assumptions were incorrect, many of the physician's that were invited to participate in this project chose not to acknowledge the presence of AD or dementia in their practice. Instead, they attributed the symptoms to the fact that the patient's were old and statements such as "of course they forget." A second assumption was that if provided adequate training and education to the rural practices, the clinician and their teams would be self-sufficient in recruiting patients into the project. In summary, we encountered a number of unexpected obstacles that needed to be addressed before actual recruitment into the study was started. After, these and other barriers that limited our ability to interact with rural practices were adequately addressed. "The telemedicine in the evaluation of Alzheimer's disease in a rural, African-American population" project has enrolled approximately sixty-eight subjects with fifty-four

assessments occurring via telemedicine successfully with a 21% failure rate over the course of the study. Out of these sixty-eight patients, eighteen participants were randomly selected to be assessed both via telemedicine as well as in-person as a means to examine the validity and reliability of this approach. During the course of the project, it was discovered that telemedicine assessments were as effective as in-person assessments, evident through identical diagnoses. Additionally, prior to contrary belief, the rural African-American population was highly receptive to participating in the study as well as attending the planned community outreach events in their communities. Ultimately, we have developed and validated the methodology that could have a major impact in the diagnosis and treatment of African-Americans in rural communities. Our project's long-term vision is to develop practical, standardized processes for the diagnosis and treatment of Alzheimer's disease in rural, African-American populations that can be implemented statewide and ultimately on a national level.

### **Identified and confirmed initial and consistent barriers**

- At the initiation of the project, we found that to introduce a new concept in a busy rural clinical practice was difficult and the buy-in process was labor intensive, as it required a practice culture change. In further identification of barriers, we realized there were difficulties with limited local resources. Many of these practices are short-staffed and barely able to handle their clinical patient workload. Introducing a project that would require significant time from the physician and staff outside their demanding patient load proved challenging. This made identifying appropriate rural practices that treated our targeted population and would be interested in joining the project as a collaborating partner site, very tedious and time-consuming.
- After identifying practices that did agree to participate, we continued to encounter obstacles with recruitment due to limited staff resources. We found that partner sites were not enrolling patients into this project simply because they did not have the staffing resources to pull away from clinical work to devote to the requirement of the research effort. Effort was made to re-train partner sites on the proper way to recruit patients into the study.
- Shortly after re-training partner sites, patient enrollment began. The enrollment process involved complexities unforeseen. We faced difficulties in dealing with the first patient and caregiver enrolled. The expectations of the study visit for the patient/caregiver were not aligned with the expectations of the partner site. We found that patients that we expected to enroll in the project would not sign the informed consent once our team provided additional details about the project. Upon further investigation, we discovered that the rural practices were not adequately explaining the project to the patient or caregiver, and the patient and caregiver were not educated prior to meeting with our team as to the importance of the evaluation.
- We took additional time to provide further education and provide resources to ensure the rural practices were adequately communicating the purpose, benefits, goals and time commitment of the project to each potential patient. Additional training and dialogue with the partner site team was provided and was crucial in preventing miscommunication with future patients/caregivers enrolled.
- Enrollment continued and evaluations were conducted via telemedicine. African-American families were highly receptive to the concept of receiving attention for dementia care in conjunction with their primary care physician and a clinician who specialized in the area of dementia.
- After realizing a minimum of two partner sites would be needed to complete the project, we identified and added an additional rural practice, Abbeville Neurology. Initial conversations began with Dr. Glen Scott with Abbeville Neurology during the latter quarter of the second year of the project. The appropriate protocol was taken to ensure the partner site received training and IRB approval before recruiting patients or conducting any assessments.
- Armed with two trained and fully functioning partner sites, the bulk of patient enrollment and assessments continued successfully over the past year. These consistent enrollments and assessments lead to 100% completion of the eighteen assessments involving randomly selected patients participating in both in-person and telemedicine assessments as a means to test and examine the validity of the tool.

- Another obstacle involved successfully scheduling time for the assessments to be completed. Many participants in the project, including the patient, caregiver, study team members, rural physician and staff, often times had conflicting schedules and identifying available times to accommodate all entities' schedules proved time-consuming.
- Additionally, a total of sixty-eight patients enrolled in the study, although this number of total enrollment is lower than we initially anticipated, we can attribute this to the initial and consistent challenges encountered throughout the project as noted in the preceding paragraphs.

### **Patient Diagnosis**

- A highlight of the study lies in the number of enrolled patients, who were previously undiagnosed and untreated for AD, received a diagnosis after our assessment. These diagnoses made through telemedicine were crucial elements in helping both the patient and their family to begin developing an effective plan of care. The relationship between the specialist and the patient's primary care physician served to be invaluable as the patient and the caregiver could coordinate a plan of care with both physicians serving as resources simultaneously. This information is highly pertinent and reveals one of the benefits to patient participation in the project as patients who had limited access to care, consequently were able to receive a diagnosis and the opportunity to plan responsibly for their futures.
- It should be noted that after a preliminary review of the data obtained, telemedicine assessments were as effective as in-person assessments, illustrated by the high occurrence rate of identical diagnoses.

### **Initiation of Descriptive Data Analysis**

- As the last remaining diagnosis visits begin to come to an end, we have focused our attention on initiating the descriptive data analysis component by having fellow MUSC team members added onto the study. Currently, the majority of the data analysis team members have been both approved and added onto the amended IRB. Thereafter, the data analysis team noted two additional team members would be needed to complete the data entry portion. These additional team members' names and information were received and reviewed for IRB approval. Since then, the two team members have been approved and added onto the amended IRB. With this approval, the data analysis team has noted they will begin compiling the data and providing insight in regards to the descriptive data that has been obtained through the project. The data analysis component should be completed no later than July 31<sup>st</sup>, 2014, which coincides with the termination date of the project. We are confident that the data obtained through the analysis will serve as a reflection of the validity and effective utilization of telemedicine in the assessment of Alzheimer's disease and other cognitive disorders garnering attention both on a statewide and national level.

### **Dissemination of results to communities- Community Outreach Events**

- Successfully conducted two community outreach events in rural towns such as Andrews, SC and Abbeville, SC. Our primary goal for each event involved informing the rural community, particularly the African-American population, about Alzheimer's disease, the benefits of early detection and how modern day technology such as telemedicine is allowing rural residents to obtain the care they need without leaving their primary care physician's office. Our team built relationships within the community with fellow community leaders such as town mayors, partner sites, fellow physicians, foundation coordinators and the South Carolina Alzheimer's Association chapter to create a communal event in which attendees could learn more about the disease as well as the promising discoveries we encountered through the course of the project.
- The first community outreach event occurred in Abbeville, SC at the Abbeville Area Medical Center on June 3<sup>rd</sup>, 2014. During the event attendees were provided with educational tote bags filled with resources including brochures from various entities such as MUSC, the Alzheimer's Association and more. These educational tote bags served as an essential component in successfully providing resources pertaining to dementia as well as encouraging healthy lifestyle choices such as keeping one's mind active. Each presentation began with a brief introduction and thanking of community collaborators followed by an extensive but user-friendly presentation about Alzheimer's disease by principal investigator, Dr. Jacobo Mintzer. Upon conclusion of background information on the disease, the SE

VIEW coordinator, Ms. Roaden conducted a brief overview and analysis of the SE VIEW- telemedicine in the evaluation of AD in a rural, African-American population project to attendees, demonstrating how telemedicine can be effectively utilized in the assessment of Alzheimer's disease. These town hall style presentations allowed for an open forum for attendees to openly ask questions, express concerns or suggestions for more educational events within their area. Additionally, the information and results regarding the project served beneficial not only to attendants, but the rural medical community as they gained knowledge of cognitive impairment, indicator signs and future methods of diagnosing Alzheimer's disease. We found these presentations to be highly effective and successful as noted by the number of attendees as well as their inquiries regarding potential presentations in the future.

- The second community outreach event occurred in Andrews, SC at Ebenezer Missionary Baptist Church on June 25<sup>th</sup>, 2014. Partnerships were formed successfully with fellow community leaders including the Mayor of Andrews and the South Carolina Alzheimer's Association chapter. The same flow and protocol was utilized in conducting the presentation. Once again the rural African-American population was highly receptive to the presentation indicated by a strong turnout as well as inquiries regarding future educational presentations in their area.

## **Key Research Accomplishments**

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### **Southeastern VIEW Administrative Core (SEVAC)**

- **Communication/Coordination Activities:**
  - Continued weekly staff meeting with the SE VIEW PI and Program Manager.
  - Continued monthly teleconference meetings with SE VIEW Administrative Core to review SE VIEW progress.
  - Continued bi-monthly communication with the TATRC Program Officer.
  - Continued monthly meetings of the SE VIEW PI with the MUSC President and Provost established designated accounts.
  - Continued to hold bi-monthly meetings of the SE VIEW Executive Committee.
  - Continued leadership and consultation bi-monthly through individual project meetings, to address programmatic issues, strategic planning, trouble shooting, problem resolution, and project evaluation.
  - Continued to attend open forums on the MUSC campus and in SE VIEW communities, at least monthly on average, e.g., 'Grand Rounds,' 'lunch-n-learns,' special seminars, sponsored speakers, panel discussions, 'town meetings', etc.
  - Continued robust website development, maintenance and enhancement.
  - Continued aggressive social media networking.
  - Continued coordination with MUSC Business Development and Marketing on public relation activities to promote awareness of SE VIEW outreach activities and expand SE VIEW marketing tools and resources.
  - Consulted with the Office of Research and Sponsored Programs staff as needed.
  - Meetings with the Director of Grants and Contracts Accounting as needed.
- **Administrative/Fiscal Activities:**
  - Grants/contracts administration, human resources administration, business operations management and procurement.
  - Monthly reviews of expenditure reports for accuracy and compliance with federal and institutional guidance.
  - Regular reviews of activity and costs per initiative to identify under/overutilization of resources or disproportionate use of resources by any area, with additional review, adjustment or action as needed.
  - Guidance and assistance to comply with all reporting requirements of DOD and other cognizant

entities.

- **Integrative Activities:**
  - Bi-monthly strategic planning reviews and sharing of ‘best practices’ for community engagement and coordinated communications in the locales that host the SE VIEW initiative.s
  - Ongoing program assessment and evaluation within the overall SE Evaluation Plan.
  - Continued leadership, visible participation and programming of annual National Conferences on Health Disparities, Community Leadership Institutes and Technical Assistance Workshops.
  - SE VIEW PI provided consultation in the development of an article, which featured SE VIEW among programs in the October/November 2012 edition of Progressnotes.<sup>30</sup>

### **MUSC Public Information and Community Outreach (PICO) Initiative and Community Institutes for Traditional and Nontraditional Leaders**

- **2013 Accomplishments**
  - Community Leadership Institutes (CLIs)
    - Savannah, GA CLI
      - Savannah State University (September 6, 2013)
      - 145 in attendance
  - Technical Assistance Workshop (TSWs)
    - Columbia, SC TAW
      - Allen University (September 28, 2013)
      - 91 in attendance
  - Seventh Annual National Conference on Health Disparities
    - Location: Sugar Bay Resort and Spa – St. Thomas, U.S. Virgin Islands - November 13 – 16, 2013 (367 in attendance)
    - Built upon the six prior national conferences on health disparities held in Charleston, SC (2007 and 2011); St. Croix, US Virgin Islands; Atlanta, GA; Philadelphia, PA; and Little Rock, Ar. Program-related efforts officially commenced, March 27, 2013, in St. Thomas, USVI, with a planning session that convened 26 health care professionals, policymakers, and university faculty from across the nation to provide input on topic selection, expert panelists and prospective sponsors and supporters.
    - Program partners: University of the Virgin Islands, the USVI Caribbean Exploratory NIMHD Research Center, Clinton Presidential Center, Morehouse School of Medicine, University of Arkansas for Medical Sciences, and the Congressional Black Caucus Foundation, Inc., in conjunction with The Congressional Black Caucus Health Braintrust and TriCaucus Health Task Force Chairs.
    - Addressed human trafficking and social determinants of health, including education levels, health literacy, poverty, public safety, community design, access to care, environmental quality, environmental justice, and personal, government and corporate responsibility. A partial list of presenters includes: Reverend Dr. Beecher Hicks, Jr., Metropolitan Baptist Church; Dr. Debra Hoy Perez, Annie E. Casey Foundation; Dr. Wayne A.I. Federick, Howard University; Dr. Yitades Gebre, Pan American Health Organization; Dr. Kendrick Pickering, Minister of Natural Resources; The Honorable Donna Christensen, MD, US Congress (Delegate for the US Virgin Islands); Dr. Reed Tuckson, Tuckson Health Connection; Dr. Daniel Rahn, University of Arkansas; Dr. Britt Rios-Ellis, University of California-Berkeley Long Beach, CSULB; Dr. Thomas Ellison, Bruno-Smithfield Community Health Center; and Mr. Michael Rashid, AmeriHealth Caritas Partnership. Hundreds of conference attendees expressed that they learned new approaches and planned to disseminate the information in their workplaces and communities.

- **2014 Accomplishments**

- Community Leadership Institutes (CLIs)
  - Montgomery, AL CLI
    - Montgomery City Hall Auditorium (April 25-26, 2014)
    - 93 in attendance
- Eighth Annual National Conference on Health Disparities Planning Committee Meeting
  - The Westin Long Beach, Long Beach, CA (May 1, 2014)
  - 22 health care professionals, policy makers and university faculty from across the nation provided input on topic selection, expert panelists and prospective sponsors and supporters
- Our Health Made-for-Television Dialogue
  - May 23, 2014: MUSC PICO staff met with ETV President and CEO, Lina O'Bryan, to discuss future collaborative efforts. MUSC and ETV propose to produce a series of educational programs and modules on health issues relevant to residents of South Carolina.
  - *Our Nation's Health: A focus on Social Determinants*
    - July 2014, the series was edited into a 20-minute overview piece, suitable to present at programs such as the National Conference on Health Disparities

### **Health Careers Academy and Junior Faculty Development**

- **Health Careers Academy**

- Students have an increased knowledge of:
  - Their respective career paths (dental medicine, medicine, occupational therapy, and their specializations)
  - Requirements for admission to health professions programs
  - Financial aid resources and opportunities
  - Resources to support academic program matriculation, retention and progression
  - The definitions, causes, maintenance, effects, and/or treatments of the identified health-related topic
  - The application of soft skills and academic skills to promote higher level reasoning and interactions for successful matriculation

- **Junior Faculty Development**

- Debbie C. Bryant, DNP
  - Funding Summary
    - Robert Wood Johnson Foundation - April 1, 2013 – March 31, 2014
      - Community Compass – A Tri-County Healthy Eating and Active Living Practice Model (HEAL). This purpose of this project is to implement a healthy eating and active living practice model to address obesity and healthy lifestyle behaviors with African American community social, fraternal, and faith-based organizations
      - Role: Principal Investigator
    - MD005892, Ford, Esnaola (PI) – April 1, 2012 – December 31, 2016
      - NIH/NCMHD
      - Improving Resection Rates among African Americans with NSCLC  
The purpose of this two-arm, cluster-randomized trial is to evaluate the impact of a dynamic, patient navigation intervention in reducing potential barriers to surgical cancer care and improving resection rates among African Americans with early stage non-small cell lung cancer. Study participants will be recruited from six geographically diverse study sites within a statewide Cancer Clinical Trials Network.



- Role: Co-Investigator
- Avon Foundation for Women – October 1, 2010 – December 31, 2014
  - A "Lay" Patient Navigation Safety Net Program for Minorities and Economically Disadvantaged Women  
 The goal of this program is to provide navigation services to removing barriers that prevent timely and complete breast health and treatment services. The program takes an intensive, proactive approach by utilizing the National Cancer Institute (NCI) "Mammograms not just once, but every year for a lifetime" campaign to assist navigated patients with annual mammography re-screening services.
  - Role: Principal Investigator
- Project Summary
  - The Community Coompass, 2014 Movement and Motivation
    - This annual educational and awareness event is a community action project to fosters community /university partnerships and increase opportunities for organizations and individuals to consume nutritionally balance diets, engage in physical activities, and support a smoke free environment. This event is in its 4th year and took place on April 25, 2014. This event is free and open to the public to taste healthy recipe samples from Sodexo, get information on the Affordable Care Act and other health care tips, and participate in exercise classes. The featured speaker was Anton Gunn, Health Care Strategist and Presidential Appointee.
    - Two articles were written about the 2013 event in the Post and Courier news article and **MUSC Catalyst**<sup>31</sup>.
- Honor Summary
  - Received a promotion to Director of Partnerships for Healthcare Quality Research at MUSC.
  - Received the 2012 Robert Wood Johnson Foundation (RWJF) Community Health Leaders Award
  - Bryant featured in the RWJF Scholars, Fellow & Leadership Diversity Marketplace
  - December 2012 - Bryant feature in Ebony.com wellness and empowerment/Health article **"Fighting Cancer One Women at a Time"**<sup>32</sup>
  - June 21, 2013 Presenter at the 11<sup>th</sup> Annual Summer Workshop Disparities in Health in America – Working Towards Social Justice
    - Program Chair – Lovell Jones
    - Prairie View A&M University College of Nursing
  - Bryant featured in the Robert Wood Johnson Foundation (RWJF) Scholars, Fellow & Leadership Programs Diversity Marketplace
- Ida J. Spruill, PhD
  - Four areas of focus
    - Conducting Community-based health promotion intervention research and practice with individuals in South Carolina.
      - The Annual Delma Woods & Aleta McLeod Health Wellness Health Fair is an annual event that is open to the public, military families, and residents along the I-95 Corridor. The 2014 event was held in February 2014 at Arthur C. City Gym in Charleston. Over 175 participants and volunteers ignored the harsh weather with flash flood warnings to take advantages of Blood pressure, cholesterol, diabetes, height, weight, vision,

- spine, HIV, Cancer risk assessments, prostate and Sickle cell screenings at the event.
  - Bubbling Brown Sugar Diabetes Seminar, July 2013. The name of the event is Back to Basics: Caring for your diabetes. A partnership was formed with NovaNordisk for to provide diabetes educators and healthy snacks.
- Cross-project synergies that have developed during the quarter and include any networking activity and collaborations that have been established outside of the SE VIEW community.
  - Community Engagement for Orangeburg and Dillon Counties: In spite of many educational intervention programs, the disease continue to increase in AA communities as there appears to be gap between intervention and self-management practice among Africa Americans especially rural AA. As our research project, **Project DIABETES** sought to understand the ethno-cultural barriers to health literacy and diabetes management among AA throughout SC, we also identified within both counties a number of participants who indicated a need for additional education about diabetes, especially, what cause diabetes and to best manage diabetes.
  - A common comment expressed by participants was “diabetes is caused by eating to much sugar’,” and “people who take the needle, have a worst case of diabetes than people on the pill. “ Providing health promotion, community education or community services is not supported within our current funded grant activity. To this end, we developed plans to conduct two countywide Health Education/Promotion in Orangeburg and Dillon Counties. Using principles from Community-Based Participatory research, a planning committee has been organized by our research project to seek input from residents in terms of best date, time place and name to call the session the educational event.
- Accomplishments
  - Received the FY 2012 Presidential Early Career Award for Science and Engineering (PECASE) Award. This award is the highest honor bestowed by the United States Government on science and engineer ing professionals in the early stages of their independent research careers.
  - Received a promotion to Associate Professor at MUSC.
  - **R01 NIH/NINR R01 Grant application, Title: *Ethno-Barriers to health Literacy and disease management among AA in SC approved. Project year April 30- July 1<sup>st</sup>, 2015***
  - Completed Phase one of the project, which included conducting twelve focus groups. (n= 120) Transcripts are being prepared for data analysis
  - Phase two includes cognitive interviews (n=12) with formal and informal leaders for survey development and pre-testing.

### **Stroke and Stroke Risk Reduction Initiative (SSRI)**

The key accomplishments emanating from these aims are outlined below:

#### **Aim I: SSRI Program Administration**

- **Team Building and Program Coordination**
  - The SSRI Team holds a weekly meeting schedule in an agenda format with work-scope/actions, which are reviewed each week.
  - Expanding the team as appropriate based on partner interface/collaboration.

- SSRI representatives attended all SE VIEW Executive meetings, Strategic Planning retreats and other function, reporting back to the team.
- All reporting requirements were met.
- **Interfaced and collaborated with potential partners on an ongoing basis and as appropriate**
  - Interfaces/collaborations of note included:
    - MUSC Hollings Cancer Center (HCC) - Cancer Disparities Program (CDP)
    - MUSC Community Health Partnership & Community Engaged Scholars
    - S.C. Statewide AHEC program
    - College of Health Professionals, Stroke Rehabilitation Research Division
    - USC Stroke Program (Dr. Souvik Sen)
    - MUSC Hypertension Initiative (Sheryl Mack, Brent Egan)
    - CEASE: Community Engaged Assessment to facilitate Stroke Elimination (SCTR)
    - EMS of Charleston, Dorchester and Berkeley Counties
    - Dementia – SE VIEW Alzheimers project
    - Hypertension – M. Laken’s SE VIEW project
  - Invited potential collaborators to SSRI Team meetings. Several of these interfaces led to further partnerships and/or led to the addition of a SSRI Team member.
- **Conducted site analyses of potential external partners**
  - Determined ROIs, identified potential partners, examined Epidemiology Profiles, and contacted potential partners, as appropriate, including:
    - Clarendon Hospital: Williamsburg County - Manning, SC (I-95 Corridor)
    - Toumey Regional: Sumter County - Sumter, SC (I-95 Corridor)
    - Colleton Medical Center: Colleton County - Walterboro, SC (I-95 Corridor)
    - Bamberg County Hospital: Bamberg County – Bamberg, SC (I-95 Corridor)
    - The Regional Medical Center of Orangeburg – Orangeburg, SC (I-95 Corridor)
    - Beaufort Memorial Hospital – Beaufort, SC (Coastal Carolina)
  - Based on analyses, engaged existing partners in SSRI initiatives as appropriate:
    - Williamsburg – CREST/REACH program expansion and training
    - Georgetown – CEASE pilot community
- **Promoted the aims of SE VIEW and SSRI whenever appropriate**
  - Attended numerous meetings/conferences and created a wide variety of promotional materials.
  - Provided a number of program presentations.
- **IRB/ORS: Developed study designs, protocols and data requests for review/approval**
  - IRB Approval: Initial research protocol designed, developed, submitted & received approval.
  - TATRC Approval: Received on January 25, 2012

## **Aim II. Benchmark regions with & without REACH and evaluate the impact of telemedicine**

- **Access to Care:**
  - Evaluated access to expert stroke care pre-and post- REACH implementation: Collecting census data and initial analysis being refined and completed.
  - Determined the number of residents with “access to expert stroke care.”
  - Findings were presented at an international conference and an article was published.
- **Awareness of symptoms, appropriate response times, and attitudes regarding treatment:**
  - Started survey with the IRB-approved protocol to contact all patients having had a REACH Telestroke consult in order to obtain information related to their recognition and response to the symptoms, which led to their REACH stroke consult.
  - REACH patients were surveyed.
  - Analysis of findings to be organized and presented.
  - The SSRI Team is reviewing manuscript draft.
- **Time from Onset of Symptoms to Emergency Department**

- Requested EMS “run sheets” on all REACH patients that used EMS: DHEC data request was developed, reviewed & submitted for two NEMISIS II data sets: one identified for REACH patients and one de-identified for all
  - Data release is still pending DHEC approval.
- Examined critical time point data in REACH as potential evaluative criteria
- Examined feasibility of conducting a community-based assessment regarding related attitudes/opinions (e.g. 911-use, reasons for time delays, potential interventions)
  - Created the Community Engaged Assessment to Eliminate Stroke (CEASE) Proposal in partnership with the SE VIEW Community Engagement Scholar leadership team and received SCTR Pilot Project funding.
- **Use of Alteplase (tPA):**

Requested two data sets from ORS to assess tPA use and the impact of REACH. Data matching, required for final data release currently being obtained.

**Aim III. Provider Education:** *Developed, implemented and evaluated a Stroke CME program*

- **Provided targeted stroke and stroke prevention CME programs to health providers in the ROI:**
  - Developed the CME concept and completed the CME application process.
  - Examined the current CME training sites and partnerships and further promoted its use to these partners.
- **Identified gaps in knowledge, behavior & outcomes and design the CME programs specific to these needs**
  - Continue to interview key personnel at partner sites to determine appropriate CME program format.
  - Collaborating with Area Health Education Center (AHEC) to assess more training needs and uses of the South Carolina Health Occupations Outreach Learning System (SCHOOLS) distance-learning network.
- **Administered the CME programs through the traditional, in-person CME venue and utilizing distance learning technology**
  - Selected presenters, topics and training dates.
  - Developed/administered program curriculum live.
  - Aired live presentations across the state using the AHEC SCHOOLS Network thus expand community access to training.
- **Created a bank of enduring stroke and stroke prevention education material that can be accessed electronically**
  - Collected all training materials for future use, as appropriate.
  - Recorded all CME broadcasts and offer programs online for CME credit
  - Planning Acute Stroke Management modules

**Aim IV. Epidemiology Core:** *Developed Epidemiology Profiles & began to acquire/maintain overall data sets as a common resource for all SE VIEW cores.*

- **Acquire/maintain databases pertinent to SE VIEW projects**
  - Emergency room and Hospital data
  - Socioeconomic status (SES) and Census data
- **Analyze and report data utilize the three ROIs**
  - Collected, standardized and reported initial disparities data by ROI in the first SE VIEW Epidemiology Profile.
- **Completed Aim I: Determine Region(s) of Interest (ROIs)**
  - Defined Primary ROIs grouped by county into 3 regions
    - I-95 Corridor
    - Coastal Carolina

- Rest of S.C.

**Aim V. Stroke Care - REACH-MUSC Telemedicine Program:** *Improve access to care through the use of telehealth technologies.*

- **Site Updates:**
  - Current REACH MUSC Telemedicine Network has 13 sites 2,031 hospital beds and 379,875 annual ED visits. This network provided over 4,388 consultations by the end of FY2014.
  - Visited and retrained REACH sites.
- **Program Expansion:** *Collaborate & examine feasibility to expand access to other specialties using REACH technologies*
  - **MUSC CREST (Sepsis & Trauma) Program:**
    - CREST was successfully established using the REACH platform.
    - CREST/REACH staff held collaborative meetings
    - First combination CREST/REACH site was established at Williamsburg Regional
  - **Other Specialties:**
    - Examined feasibility of using REACH technologies for several other specialties, hospitals are interested in telemedicine for in-patient consults using REACH.
    - Provided consultative services and support for other specialties exploring telemedicine.
  - **Primary Care setting:** Began to develop a model for expansion into primary care
- **Patient Care/Follow-up:**
  - **Physician Portal:** *Allow referring physicians to access their patients' EMR at MUSC in order to improve communications and continuity of care.*
    - Collaborated with the MUSC Physician Liaison Program to introduce the E-Care Net Viewer/Oacis program to our REACH partner sites.
    - Portal introduced to all new REACH sites as a presentation during the initial MUSC CME Training Program and applications distributed, upon requested.
    - Provided contacts at existing REACH sites to Liaison for further dissemination.
- **Tell the Story:** *Document qualitative patient care information*
- Developed an audio-video presentation of patient stories, posted them online and presented them during program presentations, as appropriate.
- Continue to working with marketing as we collect/disseminate patients' stories.

**Heart Health – Preventive Cardiology Research Center**

- RWJF New Connections and CVD-PRIDE selection for Center faculty and SE VIEW JFDP scholar Tiffany Williams, DNP, PNP
- ASE Career Development Award and AAP Research Fellowship Award for Center faculty Shahryar Chowdhury, MD
- DHA recipient and American Board of Obesity Medicine certification for Center director Melissa Henshaw, MD, MSCR, DHA

**SC TeleSupport: Diabetes Management Initiative (Effectiveness of Technology-Assisted Case Management in Low Income Adults with Type 2 Diabetes**

Please see **Table 6** for details of key research accomplishments.

**Tele-Critical Care to Reduce Rural Health Disparities**

- A manuscript titled “A mixed methods descriptive investigation of readiness to change in rural hospitals participating in a tele-critical care intervention” was published in BMC Health Services Research.
- Posters and abstracts were presented to colleagues nationwide at numerous conferences, such as the

American College of Chest Physicians' in 2011 and 2013 and the American Thoracic Society International Conference in 2013 and 2014.

- All IRB required documents were submitted and all approvals and continuing reviews were received.
- The project received from the SC Office of Research Statistics a database containing all 2010 SC patient records with a diagnosis of sepsis and respiratory failure.
- Valuable insights were gained on the challenges of developing a successful telemedicine program while working as a team showing solidarity between the programs. Enhanced collaboration and partnerships with other MUSC telemedicine programs through recurring meetings and sharing research products and ideas.
- Program investigator Dr. Andrew Goodwin was granted a highly competitive early career development award as part of the SCTR KL2 scholars program. Dr. Goodwin's project: "Racial Disparities in Sepsis: The Role of Immunologic Heterogeneity" utilized a multidisciplinary translational approach to explore previously described racial differences in sepsis incidence and outcomes.
- Designed a conceptual model for investigating the inter-hospital transfer patterns and care transitions for critically ill patients
- Developed a de-identified database and performed a descriptive analysis of the 2010 data.
- In January 2014, a \$1.4 million grant gained from the Duke Endowment for multi-year project sustainability.
- In November 2012, a \$50,000 award was obtained from the South Carolina Clinical & Translational Research Institute.

### **Lean Team Initiative**

- Collected and analyzed baseline assessments of 806 JROTC research participants (788 students, 17 instructors) from 11 CCSD high schools and 506 (489 students, 17 instructors) second measurements from 4 of the schools
- Conducted and analyzed 7 Focus Group sessions with instructors and students; and conducted Exit interviews/surveys of instructors
- Found that a high percentage (44%) of students and instructors (67%) were overweight/obese and failed to consume recommended amounts of fruits and vegetables (93%), drank too many sugared beverages (96%) and viewed too much screen time (83%).
- Found that through analysis of BMI and % Body Fat data of baseline student surveys that reliability of BMI in teens may decrease between the 75<sup>th</sup> and 90<sup>th</sup> percentiles
- Capacitated the 11 study high schools to monitor fitness of students and staff by providing BMI and Body Fat equipment, training and resources, precautions, and recommendations on measuring weight status of adolescents.
- Found that one simple hindrance to teen girls engaging in regular vigorous exercise could be remedied by providing quality and properly fitted sports bras
- Found that instructors and students desired additional nutrition education in the classroom
- Found that instructors desired additional training in nutrition education

### **Community Engaged Scholars Initiative (CES)**

CES has developed several cross-project synergies during the quarter that include the following:

- The team has been working with Bamberg School districts 1 and 2 to promote wellness in the schools. Staff is assisting them prepare for an upcoming Request for Proposals that would give them staff support and monetary incentives to implement the school wellness checklist that the Boeing Center for Children's Wellness has developed and successfully implemented in other school districts. This is especially important in Bamberg, which has some of the highest obesity and diabetes rates in South Carolina. Carolyn Jenkins has participated in the review of grant proposals for several former CES participants.

- Working closely with the health promotion coordinator at SCDHEC to implement healthy eating/active living initiatives in more rural parts of the state.

### **Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)**

Cross-project synergies with other SE VIEW teams took place in multiple ways:

- Dr. Marvella Ford is working with Mr. David Rivers, Dr. Deborah Williamson, Dr. Latecia Abraham and other DOD SE VIEW investigators to develop a Student Research Forum for the Eight Annual National Conference on Health Disparities. The team will work to develop a national Call for Abstracts for student abstract submissions for poster presentations for the 2014 Conference. The team continues to develop the Call for Abstracts for student abstract submissions for poster presentations during the 2014 Conference. To demonstrate the rigor of the scientific review process, it is important to note that at least 14 reviewed abstracts were not accepted for presentation.

### **Health Empowerment Zone**

- New partnerships with FamilyCorps, Trident Technical College and Father-to-Father Project were established through collaborating on a grant that was submitted to the Children's Trust Fund of SC. The grant focused on creating healthier young families. These new partnerships enabled us to form new referral mechanisms for young families living in North Charleston. We will be able to expand our reach with the establishment of these new partnerships.
- Sustainable community coalition
- Obesity Summit with establishment of action groups to address policy, research, and education
- Update of Community Action Plan

### **Healthy People in Healthy Communities**

- One of the most notable programs introduced was providing competitive community grants so local entities could teach healthy lifestyles and screen/refer for early detection of chronic disease, and working with the medical community to coordinate evidence-based approaches to prevention and treatment of chronic disease. See **Fig. 10**.



**Figure 10. Community Grants**

Organization/Agency & Title of Grant	DESCRIPTION
Williamsburg Regional Boys to Men Club, Inc. Kingstree, SC <b>"Let's Get Physical"</b>	School District Parent Coordinator. Work w/parents of students @ Greeleyville Elementary; re: nutrition, physical activity, education.
Marion Missionary Baptist Church Salters, SC <b>"Working Together for a Healthier Lifestyle"</b>	Collaborators will work w/children & adults members of church & surrounding community. Health Screenings (lipids, diabetes, hypertension, cancer); education re: nutrition and physical activity), Purchase equipment,* DASH cookbooks, etc.
New Commitment Lane, SC <b>"Fitness Friday"</b>	Mayor of Lane, SC and C.E. Murray HS JROTC Staff will target JROTC students, entire student body & community. Focus on physical activity, nutrition, education and health fairs.
St. Peter Way of the Cross Church Andrews, SC <b>"Parents and Children Exercising Program"</b>	Church family approach. Nutrition, physical activity classes, walk-a-thons, tracking weight loss, health fair (screening/referral), cookbooks, etc.
Hopewell Senior Day Care Center, Inc. Salters, SC D.P. Cooper Elementary School Blakeley, SC <b>"Food and Fun: A Nutritional and Physical Activity Program for Children"</b>	Guidance Counselor, Curriculum Specialist, Principal, Teachers, Parents focus on children. Nutrition, PA, messaging, newsletter, DASH cookbooks, biweekly discussions.
Williamsburg Home Town Chamber Kingstree, SC <b>"Affairs of the Heart"</b>	School District Coordinator. Community summits and health fairs w/students, parents and staff in Hemingway, Greeleyville, Kingstree schools. Nutrition, PA, education, etc.
Friendship United Methodist Church Nesmith, SC <b>"Change Your Life with One Step and One Move Ministry"</b>	Pastor, Church Committees: Church & Society, Disaster Preparedness, Finance, Secretary, WRH Community RN. Members of all ages, gender. Nutrition, PA, health screening, tracking health info, walk-a-thons, health fairs, education, etc.
Parents Anonymous of South Carolina, Inc. North Charleston, SC <b>"Rural Education Accelerating Community Health Initiative Impacting Families"</b>	Coordinator will select 25 families across the county w/focus on nutrition, food preparation, education, PA.
Williamsburg County First Steps to School Readiness Partnership Board Kingstree, SC <b>"Rural Education Accelerating Community Health Initiative Impacting Childcare"</b>	Target audience: Parents, Childcare Providers and children countywide. Healthy food preparations, PA, education/training sessions for Childcare Directors and kitchen staff of 7-8 centers, ~355 children. DASH cookbooks, Connie's Bakery & Specialty Shoppe, WC ESMM, etc.
Williamsburg County Disabilities & Special Needs Board Kingstree, SC <b>"Williamsburg County Smoking Cessation Prevention and Health Education Awareness Program"</b>	Partnership with Life Support, Inc., Williamsburg County School District & Parents. Target audience young adults 11-25 yrs. in-house clientele and homebound. In Cades, Kingstree, Hemingway, Greeleyville, Lane, Salters. Education, training, implementation, early intervention.

- A Community Health Advisory Board (CHAB) was established in Williamsburg County, which included key stakeholders who could tailor the program and its implementation to the current needs of the community. Please see the list CHAB members below:
  - Ernest M. Atkinson, MD – Board Member, Live Oak Medical Center
  - Harry W. Floyd, MD, PA – Board Member, Williamsburg Regional Hospital Board
  - B. Lee Jones, MD- Board Member, Andrews Medical Center
  - Jennifer Lamb, RN – Board Member, School District Nurse Coordinator
  - Andrea M. McKnight, PA-C – Board Member (Hope Health Inc).
  - Regina Nesmith, MS – Board Member, DHEC, Region 6, Director Community Health Education
  - Karen Segars, RN – Board Member, Williamsburg Regional Hospital Community Outreach
- Provided a school grant to Williamsburg County School District (WCSD) to establish a fitness center for the WCSD faculty and staff.
- Provided community health fairs to raise awareness about healthy living in the community.
- Coordinated a Pastor's Retreat and Workshop.
- DASH Cookbook – the team disseminated the DASH for Good Health Southern Style cookbook to Williamsburg County hospitals, worksites and entities. Organizations have started nutritional classes, hosted food preparation seminars using recipes adapted from the cookbook. <http://www.ccihealth.org/dash.html>

### **Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population**

- Added Abbeville Neurology as an additional partner site. This allowed the project to have two fully functioning partner sites in rural locations.
- Completed the regulatory approval process for the additional partner site.
- Obtained IRB approvals for Abbeville Neurology partner site amendment.

- Completed Collaborative Institutional Training Initiative for Abbeville Neurology staff to participate in human subject's research.
- Trained Abbeville Neurology research team on the use of the project equipment need to carry out telemedicine procedures, assessments, and patient recruitment utilizing specific inclusions/exclusion criteria.
- Obtained Federal Wide Assurance for Abbeville Neurology to validate assurance of compliance with federal regulations for the protection of human subjects in research.
- Continued evaluating patients at Andrews Medical Center and began evaluating patients at Abbeville Neurology.
- Enrolled first subject and began evaluations via telemedicine.
- Overcame and addressed identified barriers effectively.
- Identified additional participants for enrollment at Andrews Medical Center.
- Completed approximately 68 patient visits with 100% completion of 18 participants involved in both in-person and telemedicine assessments.
- Obtained IRB and budget approvals for descriptive data analysis to occur.

## Reportable Outcomes

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### **Southeastern VIEW Administrative Core (SEVAC)**

#### **Examples of progress during the third year include:**

- Continued collaboration of the experienced management team –the PI, Finance Director, Program Manager, and the Marketing Consultant.
- Continued intensive engagement of key consultants for strategic planning and evaluation.
- Successful implementation of key communication/coordination activities:
  - Calendar of meetings (convenes, manages and documents board and committee meetings).
  - Conference calls, social media networking (Website, Facebook, Twitter, Pinterest, and Google Plus), dissemination of program brochure, and use of the SE VIEW PowerPoint presentation.
  - Facilitation and collaboration with co-investigator staff in carrying out daily programmatic details.
- Successful implementation of administrative/fiscal activities
  - Establishment and review of accounts, personnel actions, as listed above.
  - Meetings with executive agency, institutional, and program officials to prepare and present quarter and ad hoc reports on progress, budgets and other relevant matters.
- Continued to establish 'SE VIEW Action Agreements' with each SE VIEW Initiative Director.
- Continued development of template for and submission to USAMRMC and TATRC of detailed quarterly reports for each initiative.
- Management of the 2012 National Conference on Health Disparities (Little Rock, AR; November 28-December 1, 2012); confirmation and initial planning for the 2013 National Conference.
- Continued development of the SE VIEW website (<http://www.musc.edu/seview>) with extensive crosslinks to partners, affiliates, resources and tools; continued development of the SE VIEW Facebook page (<http://www.facebook.com/SEVIEW1>); launch of the SE VIEW Twitter (<http://twitter.com/#!/SEVIEW1>), Pinterest Account (<http://pinterest.com/seview/>) and Google Plus account (<https://plus.google.com/113856284520869767628/posts>).
- Received approval of SE VIEW Phase I no cost extension request for FY14 (July 1, 2013 – June 30, 2014).
- Continued development of the SE VIEW Evaluation Plan and Logic Model for Phase I and Phase II.
- Continued Progression within the Junior Faculty Development Program and Health Careers Academy Program.

### **MUSC Public Information and Community Outreach (PICO) Initiative and Community Institutes for Traditional and Nontraditional Leaders**

The following lists the results of the PICO programs:

- CLIs: a total of 238 attended the CLIs
- TAWs: a total of 91 attended the TAW
- Seventh Annual National Conference on Health Disparities: a total of 367 in attendance

The following social media outlets have been established for PICO:

- Website: <http://pico.library.musc.edu>
- Facebook: [www.facebook.com/muscPICO](http://www.facebook.com/muscPICO)
- Twitter: [https://twitter.com/?iid=am71153098513372716814227990&nid=23+sender&uid=385502360&utm\\_content=profile#!/MUSC\\_PICO](https://twitter.com/?iid=am71153098513372716814227990&nid=23+sender&uid=385502360&utm_content=profile#!/MUSC_PICO)

The lists details of the Our Health Series dialogue entitled, *Our Nation's Health: A Focus on Social Determinants*:

- Videotaped before a live studio audience at ETV in Columbia, SC - May 30, 2013; 50 guests.
- Program was broadcast statewide in SC via ETV on July 18, 2013 at 9 p.m.
- Program was broadcast on ETV's digital affiliate, The South Carolina Channel, on July 24, 2013 at 9 p.m.

Hands on Health-SC

- Hands on Health-SC staff members (Ms. Nancy McKeehan, Ms. Monique Hill, Mr. Sherman Paggi, and Ms. Maya Hollinshead) participated in 19 exhibits during the year that includes Savannah, GA, Charleston, SC, North Charleston, SC, Columbia, SC, St. Thomas, USVI, Myrtle Beach, SC and Chicago, IL
- This work resulted in lay community members requesting additional training. The exhibits fostered an opportunity for Hands on Health-SC to conduct in-depth website presentations and instruct individuals how to access health resources through interactive Internet interface.
- The exhibits also gave Hands on Health-SC an opportunity to share the website addresses: [www.handsonhealth-sc.org](http://www.handsonhealth-sc.org) and [www.hoh-sc.org](http://www.hoh-sc.org). Consequently, Hands on Health-SC had a total of 214,382 visits to their website in FY13. Additionally, the site had a total of 403,319 pageviews.

### **Health Careers Academy and Junior Faculty Development**

- **Health Careers Academy**
  - Six (6) posters, abstracts, and presentations were developed, facilitated and will be made available electronically for public review at [www.scahec.net](http://www.scahec.net)
  - Students gained an understanding of the impact of health education through service learning
  - Students have an increased knowledge of the interdisciplinary nature of the four health professions (dental medicine, medicine, occupational therapy, and pharmacy)
  - Students have been connected with faculty, practicing professionals, and health professional students willing to serve as role models
  - Program participants will be tracked to assess matriculation rates
  - Support provided for three MUSC affiliated service learning initiatives
  - A campus-wide collaborative diversity initiative
  - Recommended program modification: strengthen the marketing plan for recruitment
- **Junior Faculty Development**
  - Debbie C. Bryant, DNP
    - Promoted to Assistant Professor, MUSC College of Nursing
  - Ida J. Spruill, PhD
    - Promoted to Associate Professor, MUSC College of Nursing
    - Elected President of YWCA in Charleston, SC

- Consumer Representative for FDA, EDAC
- Manuscripts accepted:
  - Powell-Young YM, **Spruill IJ**. Views of black nurses toward genetic research and testing. *J Nurs Scholarsh* 45(2): 151-9, 2013.
  - Sale, M., Keene, K., Garvey, T, Wein-Min, C., Fernandez, J., **Spruill, I.et.al.** (2012) CARE/SHARe Waist-based Consortium Replications in African Americans. PLoS. PMID: PLoS
  - **Spruill, I.** Leite, R, Kamen, D., Fernandes, J, Humt, K.Ford, M., Jenkins, C., Andrews, J. (2012) Two decades of successes, challenges and lessons learned: Community-engaged research with the 'Gullah' population of South Carolina Gateways: International, Journal of Community Research and Engagement

### **Stroke and Stroke Risk Reduction Initiative (SSRI)**

The SSRI Team is very successful in producing a number of reportable outcomes during this period, such as manuscripts, abstracts and presentations:

- Association of Academic Health Centers Conference, Poster Presentations for Stroke
- 6th Annual South Carolina Heart Care Alliance, Heart and Stroke Care Educational Forum
- 2014 International Stroke Conference – Awards and over 40 Abstract and Poster Presentations
- South Carolina Aging Research Network Conference - Oral/Poster Presentations
- Society for Epidemiologic Research's (SER) Annual Meeting - Poster Presentations
- Stroke Center Quarterly Newsletter
- World Health Organization Conference
- American Telemedicine Association
- SmartState Council of Chairs
- Spring 2013 Neurosciences Symposium, “Innovations in Neuroscience: Gateway to the Mind and Body”
- Symposium on International Collaboration and Exchange between MUSC and Suqian People’s Hospital, Suqian Municipality, Jiangsu Province, China
- Sickle Cell Stroke Research & Stroke Cooperative Working Groups a joint lecture with Morehouse School of Medicine

Substantial progress has been made during this grant year. An administrative framework supported by a stellar team with a strong epidemiology core has been established to support the vision of becoming a nationally-recognized stroke and stroke risk research program focusing on health equity and wellness. Initial findings have been analysed which confirm the importance of focusing these efforts on communities within two regions of interest: the I-95 Corridor and Coastal Carolina regions. Numerous significant factors have been identified for measuring geographic disparities.

### **Heart Health – Preventive Cardiology Research Center**

- Workshop on the Prevention, Assessment, and Treatment of Childhood Obesity developed and presented at the 2013 MUSC Frontiers in Pediatrics
- Heart Health program has expanded over 300% over the past four years, serving primarily minority families with limited financial means
- Heart Health has completed expansion into an American Academy of Pediatrics Stage 4 (tertiary care) comprehensive pediatric obesity program, now serving four communities within the MUSC catchment area, with telemedicine services for rural families

Heart Health and the Preventive Cardiology Research Center maintain an overarching focus on identifying and reducing childhood obesity-related cardiovascular risk factors that contribute to the development of health disparities and impact service eligibility. Our primary objectives are to provide a comprehensive range of preventive cardiology and weight management services for the pediatric population of coastal South Carolina,

with a particular emphasis upon identifying and addressing etiologic contributors to cardiovascular health disparities. Volunteer involvement and community engagement remain a high priority, as well as maintaining and expanding our existing network of providers and community partners. The project has significantly expanded its operations across all SE VIEW core domains (prevention, education, partnership, and research), providing a broad range of support to underserved children and families through our clinical program and through partnership efforts with area community centers, schools, churches, and other educational entities, as well as through collaboration with the Lean Team through SE VIEW and The Boeing Center for Children's Wellness.

Our programmatic activities have clear implications for military readiness. Early detection of potential and known cardiometabolic risk factors permits the implementation of corrective measures that may ultimately reduce the impact of childhood obesity on both the individual and population level. Early detection of acquired cardiovascular disease through non-invasive imaging is a key topic of interest with major public health implications, particularly among high-risk target populations such as obese children and adolescents with the metabolic syndrome. Early detection of acquired cardiovascular dysfunction permits early intervention, and early treatment potentiates a reduction in long-term health sequelae. Earlier detection of cardiometabolic risk, combined with effective intervention during childhood and adolescence, will help produce a healthier population of military recruits. Through all of our efforts, Heart Health and the Preventive Cardiology Research Center are creating new avenues for treating pediatric obesity, managing cardiovascular risk, and reducing health disparities.

#### **SC TeleSupport: Diabetes Management Initiative (Effectiveness of Technology-Assisted Case Management in Low Income Adults with Type 2 Diabetes)**

The team analyzed data of 65 subjects that completed the baseline and 3 months follow-up appointments. The preliminary data are promising and demonstrate effects on multiple diabetes-related outcomes. Based on the 3 months data, the findings suggest that technology-assisted case management is an effective intervention for low-income patients with type 2 diabetes. It had significant effects on hemoglobin A1c, diabetes knowledge, and self-monitoring of blood glucose. Based on the preliminary results, we have been funded by the state to disseminate the intervention to six rural hospitals in South Carolina as part of their patient centered medical home programs over the next 2 years.

#### **Tele-Critical Care to Reduce Rural Health Disparities**

With the primary goal on reducing the health risk factors, which could prevent military enlistment, an evaluation of the data obtained during SE VIEW project period identified important volume-outcome relationships for patients with sepsis and ventilator dependent respiratory failure. Patients cared for in higher volume hospitals have improved outcomes compared to patients cared for in lower volume hospitals. Additionally, patients transferred between hospitals – usually from smaller to larger hospitals – appear to have especially poor outcomes. The analysis of the databases revealed very large variations in the risk of death for sepsis patients. As a result of this finding the investigators developed a multivariable model that has the ability to predict a patient's risk of death during the admission, based on the patient's age, the presence of complex comorbid conditions, the need for ventilator care, and the presence of shock at admission.

The data analysis of identifying patients in smaller community hospitals who are high risk and who should be considered for early transfer to a specialty hospital for advanced care holds the potential for improving care of African Americans and Veterans and identifying factors to target for prevention of the various critical illnesses faced by this targeted military recruitment population. African-Americans had a significantly poorer survival and many of the SE VIEW target counties in SC along the I-95 corridor have predominate African American populations.

With the attained 2010 administrative hospital data from SCORS the program's co-investigator, Dr. Kit Simpson, developed programming codes, a de-identified database and performed an observational analysis of data. With the objective to identify opportunities to improve care at the patient community and hospital level the investigators conducted a population based, descriptive investigation of critically ill patients in SC and sought to determine variation in patient survival associated with inter-hospital transfer of patients with VDRF including the impact of timing of inter-hospital transfer. The team hypothesized that patients with VDRF who were transferred between acute care hospitals would most benefit from early as opposed to later inter-hospital transfer. 308 patients met the inclusion criteria and were transferred between SC acute care hospitals. The study results showed of the 308 patients 42% died and 58% survived. Survival was numerically better at 71% for patients with transfer before 24 hours, compared to 57% for later transfers but not statistically significant. Risk of death increased 18% for each decade increase in patient age. African-American patients had a significantly increased risk of death compared to white patients. The study found that VDRF patients who were transferred early had a significantly improved chance of survival. Irrespective of timing of transfer, African-Americans had a significantly poorer survival.

The development of a system of inter-hospital collaboration to improve the care of critically ill patients in SC will provide new benefits for patients, families, and clinicians at partner hospitals. Patients will receive increased quality of care with fewer complications translating into reduced morbidity and mortality. Patients will also benefit from having an MUSC intensivist physician involved in their care via telemedicine. This will provide access to a medical specialty not currently available at our partner hospitals and intensivist directed care significantly improves mortality, morbidity, quality, and cost of care. Clinicians at partner hospitals will benefit from the opportunity to work with peers at MUSC in multiple contexts including educational forums, quality improvement meetings, case conferences, and during patient care. Finally, we believe the program will increase patient, family, and staff satisfaction.

### **Lean Team Initiative**

- Publications
  - Two abstracts were published and accepted for poster presentations:
    - The Obesity Society annual conference in September 2012: "Evaluation of weight status, % body fat and lifestyle behaviors in JROTC students". JD Key, CT Martin, LA King, Pediatrics, The Medical University of South Carolina, Charleston SC; S Slaughter, Office of the President, The Medical University of South Carolina, Charleston SC
    - Pediatric Academic Society in May 2013: "Doctor, it's all muscle!"- Comparison of body fat versus BMI in assessment of obesity in teens. JD. Key, CT Martin, LA. King, Pediatrics, The Medical University of South Carolina, Charleston SC; S Slaughter, Office of the President, The Medical University of South Carolina, Charleston SC
- Presentations
  - With financial support from the BCCW and in collaboration with MUSC's South Carolina Clinical Translational Institute (SCTR) and Center for Community Health Partnerships, we co-sponsored and presented at two obesity conferences held at the Medical University of South Carolina and Trident Technical College campus:
    - "SCTR Scientific Retreat on Obesity (October 19, 2012) featured national, regional and local presenters and drew over 200 participants from across the state.
    - "Conquering Tri-County's Obesity Epidemic: Challenges, Changes, Choices" (December 6, 2012) was an invitational leadership meeting to discuss how combined community efforts can lead to the implementation of proven approaches and undertake research to identify new approaches to the obesity epidemic facing our communities and drew over 60 community leaders (agendas can be found in Appendices).
    - "Unified! A Voice Against Obesity". SC DHEC: Lean Team Doc-adopt-initiative- Janice Key, MD. February 21, 2012 (video clip can be viewed at

<http://www.scdhec.gov/scobesity/>

- Other
  - Office of the Under Secretary of Defense for Personnel and Readiness/MPP (AP) Sharing of study results- during visit to Pentagon- May 2013
  - The Honorable James E. Clyburn, Office of the Assistant Democratic Leader, U.S. House of Representatives- Shared study overview and school wellness initiatives –visit May 2013
  - Mission Readiness (Amy Dawson Taggart)- Shared study overview and school wellness initiatives via email May-June 2013
  - South Carolina Medical Society (Annual and monthly meetings)- Janice Key, MD “An effective model to improve school health” (2013-2014)
- New/Media
  - Newsprint articles were published about the BCCW Wellness Checklist Contest and Initiative and SC efforts to reduce Obesity and Health Disparities:
    - “DD2 Educators Celebrate More than Last Day of School” – Megan Dice, Channel 2 News (WCBD-TV). May 30, 2014
    - “Boeing Center for Children’s Wellness Program Expected to Expand Beyond Charleston”-David Quick, To Your Health, Post & Courier ([www.postandcourier.com](http://www.postandcourier.com)). May 27, 2014
    - “Using Junk Food for School Fundraisers, Rewards”- David Quick, To Your Health, Post & Courier ([postandcourier.com](http://www.postandcourier.com)). February 25, 2014
    - “Is the Lack of Good Fitting Sports Bras Contributing to Obesity”- David Quick, To Your Health, Post & Courier ([postandcourier.com](http://www.postandcourier.com)). November 5, 2013
    - “A+ for School Wellness: Goodwin Elementary is top wellness school in Charleston County this year”- David Quick, To Your Health, Post & Courier ([www.postandcourier.com](http://www.postandcourier.com)). June 4, 2013
    - “School wellness finale: Sullivan’s Island wellness finale reinforces lessons learned during school year”- David Quick, To Your Health, Post & Courier ([www.postandcourier.com](http://www.postandcourier.com)). June 11, 2013
    - “SC task force tackles childhood obesity”- Joey Holleman. The State (<http://www.thestate.com/>) January 27, 2012
- SC ETV
  - “Americas Armed Forces: Time for a Checkup”-moderator John King. July 2, 2013 8pm EST (<http://www.sctv.org/armedforces/>) SE VIEW researchers participated as audience in panel discussion.
- Sustainability Funding
  - Boeing Company: BCCW applied Oct 2012 and was awarded \$500,000 January 2013 and \$550,000 January 2014 to expand school wellness efforts in tri-county region
  - Coastal Community Foundation for CRBR mini grants: BCCW applied Oct 2011, 2012, 2013 & 2014 and awarded \$1500 (60 free entries) each year to promote physical activity in school students and teachers
  - Healthy South Carolina Initiative (HSCI)-BCCW: applied Jan 2013 and was awarded \$114,000 May 2013 to reduce prevalence of obesity by improving school health environment in 30 schools in CCSD, BCSD and D2SD
  - MUSC SCTR Community Engaged Scholar (CES) grant: BCCW applied for in partnership with CCSD; awarded \$10,000 Jan 2013; June 2013 to collect and manage BMI data in school district
  - Dr. Carolyn Jenkins (MUSC REACH) applied for funding (July 2013) to reduce Type II Diabetes and co-morbidities of obesity in Bamberg County and will partner with BCCW to improve school health; application not funded.
  - Dr. Kathy Melvin (MUSC SCTR) applied for NIH R01 (April 2014) grant to evaluate BCCW SWC & Doc’s Adopt School Health Initiative; not yet awarded.



Obesity is an increasing problem in children and adolescents, which specifically impacts the fitness of military recruits. The most common reason that recruits fail their enlistment physical is obesity and its related illnesses. The purpose of our program is to understand the best ways to improve the fitness of students throughout Charleston County and to develop interventions and make recommendations for how JROTC instructors and students can benefit by improved school health initiatives and better weight status assessments. As obesity is a complex problem, our efforts entail a portfolio approach as recommended by the Institute of Medicine that focuses on improving the school health environment to include individual assessment as well as policy and environmental changes addressing nutrition and exercise; ensuring that students and teachers will have access to healthy foods and greater opportunities for physical activity.

### **Community Engaged Scholars Initiative (CES)**

The overall program outcomes will be evaluated during the no-cost extension period. The in-depth assessment of the CES Program will capture awards, national and international presentations, publications, grants awarded, grant submissions and future plans for all CES-P cohorts and the overall program staff. This assessment will be reported in the next quarterly report.

The CES has produced relevant results related to partnership capacity and sustainability. Markers of these results include formalized partnerships, publications, grant submissions led by community partners, national presentations by partner teams, and formalized plans for sustainability of the partnerships and projects. The Community Engaged Scholars Program serves as a model to build the capacity of both academic and community partners to conduct research that promotes sustainable mechanisms for attaining health equity in our communities. Future work will include adaptations of the current training model based on RFA announcements and additional training needs of academic and community partners.

The team received \$40,000 through the SC Clinical and Translational Research Institute (SCTR) to fund the CES 2014 pilot grants. Additionally, we now have participants from Clemson University and The Citadel. Each of the Scholars have committed to seeking future funding to continue their efforts to improve the lives of those in the community.

### **Mobile Outreach Van, Educational and Navigation Health Services for Underserved Populations (MOVENUP)**

The MOVENUP Program Team has received funding from the MUSC Hollings Cancer Center to cover the cost of the materials and meals for the cancer education training sessions. In addition, the team is developing an NIH/NCI R01 grant application to conduct cancer clinical trial education at the MUSC Hollings Cancer Center's Cancer Clinical Trial Network sites. Also, as has been described, funds from additional grants were leveraged to expand and sustain the summer undergraduate cancer disparities-focused research-training program.

The Cancer Research Training Program for Undergraduate Students from South Carolina's HBCUs has resulted in significant and positive outcomes:

- The goal of the program is to recruit the next generation of prostate cancer researchers by exposing undergraduate students ("Student Fellows") from Claflin University (CU), South Carolina State University (SCSU), and Voorhees College (VC) to prostate cancer research at the Medical University of South Carolina (MUSC), and training them to meaningfully participate in such research activities. The Summer Undergraduate Research Program (SURP) Student Fellows, working closely with faculty mentors completed cutting edge biomedical prostate cancer research projects

Our Mobile Health Unit (MHU) and Patient Navigation Services continued to build capacity in health care access in the I-95 Highway Corridor by coordinating and linking with other healthcare organizations in the counties, including the hospitals, Federally Qualified Community Health Centers (FQHCs), and private

physicians. Our relationships with our existing community agencies and organizations including: SC Department of Health and Environmental Control, Bureau of Chronic Disease; Department of Social Services; Palmetto Health Care; the federally funded breast and cervical cancer screening program, the *Best Chance Network*; the SC Cancer Alliance; and the American Cancer Society remains strong.

We added new organizations and community groups to our list of community partners to assist with our long range goal of reducing disparities in cancer services access, morbidity and mortality in the I-95 Corridor which represents a vital opportunity and a valuable resource for improving health outcomes and fostering economic development.

We continued our commitment to provide Cancer Education Awareness and Education related to nutrition/physical activities to communities in the I-95 Corridor Counties through our community based Cancer Education Guide (CEG) Facilitator training program.

We recruited undergraduate students from South Carolina HBCU's to become the next generation of prostate cancer researchers by exposing them to prostate cancer research in a 10-week research training curriculum, in which Student Fellows learn the fundamentals of biomedical research and a simultaneous 10-week prostate cancer research training curriculum, in which Student Fellows learn the continuum of prostate cancer research, from bench to bedside to community.

### **Health Empowerment Zone**

- 43 Community based events providing health education about healthy eating and active living and/or screening for chronic disease including risk assessments and BMI
- In collaboration with Healthy North Charleston supported the development of 3 urban gardens
- Produced an instructional video on the use of CARTA transportation system
- *The Healthy Cookbook* a community based participatory project documented by SCETV
- New partnerships include *El Informador*, local Spanish newspaper, Crop-Up, a non-profit advocacy group for healthy foods, and the MUSC Dietetic Internship program

The Health Empowerment Zone addresses systems, environmental and policy change that can reduce obesity by impacting healthy eating and active living in North Charleston, South Carolina. Our work has engaged municipal, faith-based, and education, and community organizations in North Charleston. Our work has included working with a community coalition to recruit a grocery store into the "food desert", accessing additional grant funds to stimulate 10 local projects through mini-grants, developing transportation guides and a video for communities to access fresh produce, developing a photo essay for presentation to municipal leaders on barriers to using bus transportation, working with WIC to identify local barriers to using vouchers at farmers markets for fresh produce, and participation in community-based events to provide information and resource navigation to services promoting healthy eating and active living.

Residents of low-income communities in North Charleston have consistently identified that healthy foods are more expensive and less available in their neighborhoods. Inexpensive fast foods have become the diet of many young families developing food preferences for high calorie and low nutrition foods among children and adults. When these food preferences are established in children, there is a greater potential for these children to become overweight prior to graduation from high school. This trend has been documented in North Charleston Schools. Federal food assistance programs, Food Stamps (SNAP), WIC, and National School Lunch Programs, were developed to provide increased access and availability to fresh produce and other healthy foods for low-income populations. In 2012 South Carolina was targeted as part of a national campaign to increase enrollment by the working poor, Hispanics, and the unemployed. Local officials with the federal food assistance programs have indicated that the national recruitment campaign has not significantly increased enrollment numbers in North Charleston. In addition there is an underutilization of vouchers provided by WIC

for farmers' markets. In the last year of the grant, we will be collaborate with our community partners to identify the barriers to enrollment in supplemental food programs, and the policies needed to address barriers related to transportation, culture, language, and education.

### **Healthy People in Healthy Communities**

- Pastor's Retreat and Workshop
- Establishment of the the Community Health Advisory Board
- WCSD School Grant
- DASH Cookbook

The report demonstrates that efforts were paid off and the general awareness for leading a healthy lifestyle increased among residents and in the communities of Williamsburg County. We anticipate that our programs have contributed to the large reduction of cardiovascular mortality in South Carolina, which has improved from 51<sup>st</sup> to 34<sup>th</sup> in cardiovascular mortality between 1995 and 2009, and will be expanded and accelerated in Williamsburg County. We are both optimistic and confident that the progress in health promotion and disease prevention across the lifespan in Williamsburg County will provide the leading edge for progress in South Carolina and beyond.

### **Telemedicine in the Evaluation of Alzheimer's Disease in a Rural, African American Population**

- Initiation of descriptive data analysis seeking to confirm telemedicine assessments as effective as in person assessments.
- Total of sixty-eight patients enrolled in the study.
- Forty-five patients completed all visits with 5 additional patients pending completion of diagnosis visits.
- Fifty-four patients completed visits involving assessments via telemedicine with 21% failure rate.
- Educational materials such as brochures and flyers were created for community outreach events with prior submittal to IRB.
- Received high markers on patient and caregiver surveys, indicating their satisfaction with care they received as well as the ease in the use of telemedicine.
- Conducted two educational community outreach events, both in Andrews, SC as well as Abbeville, SC, creating new connections for future research endeavors.
- Coordinated with Alzheimer's Association and local community members to discuss Alzheimer's disease as well as discoveries made during SE VIEW project.
- Educated rural medical community about cognitive impairment, significant indicator signs and new methods in the diagnosis of Alzheimer's disease.

While there have been challenges throughout the course of the project involving training, recruitment, enrollment and scheduling, the project team has developed policies and procedures and as well as unique approaches so that the model can be reproduced with minimal difficulties. Although this process was difficult and time-consuming, the information obtained will provide for reproducibility of our model. The model we developed has accomplished a recruitment of sixty-eight subjects as well as a 100% completion of eighteen patients' visits involving telemedicine and in-person assessment. In addition, we expect after the data analysis is completed to provide for full validation data for our approach.

We are confident that we have discovered key obstacles to providing primary care based assessments for Alzheimer's disease in elderly, African-American communities that are transferrable to other areas and populations around the country. Our preliminary review of the data obtained through the study reveals telemedicine assessments were as effective as in-person assessments. We hope the results of the descriptive data analysis will serve as confirmation and provide more concrete results from the project overall. Patient and caregiver surveys confirmed the ease in the use of video-conferencing as well as an overall positive experience from both the patient and caregiver perspective. Henceforth, we look forward to sharing the results of the study

and our discoveries in regards to telemedicine, a revolutionary tool that could be the future of providing comprehensive specialty care to patients who otherwise would have difficulties accessing such crucial care. The connections and presence established within the rural communities during the project will serve beneficial in future endeavors regarding Alzheimer's disease.

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## Conclusion

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SE VIEW Phase I, its Co-investigators and Administrative Core has completed Year 3 of 14 community-based research and service outreach programs. A 12-month no cost extension (NCE) has been approved for Phase I for FY14 (July 1, 2013 – June 30, 2014). The 6 additional programs under SE VIEW Phase II are nearing the end of Year 2 operation. The purpose of SE VIEW is to discover and deliver innovative health care and community capacity building solutions for underserved populations. An additional targeted outcome is to reduce the rejection rate as well as improve the enlistment opportunities and tenure of active duty military personnel.

The Administrative Core delivered operations, infrastructure access, strategic consultation, and quality process support to ensure proper directions, logistics, financial transactions, regulatory compliance, collaborative exchange, community-capacity building, and alignments with the goals of programmatic synergies and streamlining administrative processes and to foster strategic partnerships and programs to address the burden of health disparities.

An evaluation planning process, inclusive of an evaluation logic model to identify SE VIEW success objectives, continues to be developed and will be completed during the FY14 NCE. SE VIEW programmatic activities, infrastructure, collaborative exchange and evaluation priorities/outcome measures will drive the Phase I NCE and the Phase II Year 3 advances and serve as foundational for SE VIEW achievement of its stated aims.

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<http://pico.library.musc.edu/Health.php>
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## Appendices

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### Appendix 1



OFFICE OF THE PRESIDENT  
COLCOCK HALL  
179 ASHLEY AVENUE  
MSC 001  
CHARLESTON, SC 29425-0010  
TEL 843-792-2221  
FAX 843-792-1097  
WWW.MUSC.EDU

SE VIEW Executive Committee Meeting  
Colcock Hall Board Room  
Thursday, August 29, 2013, 8:30 a.m. - 12:00 p.m.  
Agenda

- 8:30 a.m. Introductions
- 8:40 a.m. Evaluation Plan (Dr. Jennifer Friday)
- 10:00 a.m. BREAK
- 10:15 am Capacity Building  
Key insights and highlights from co-investigators regarding project activities, collaborative activities with SE VIEW colleagues, community capacity building and future opportunities (**maximum of 3 minutes per co-investigator**)
- 11:30 a.m. SEVAC Support
  - October 2013 Retreat
  - Technical Reports (Tracey W. Smith)
    - 2013 Quarterly Report
      - Phase I: due September 12, 2013 and December 12, 2013
      - Phase II: due December 12, 2013
    - 2014 Quarterly Report
      - Phase I: due March 12, 2014
      - Phase II: due March 12, 2014 and June 12, 2014
    - 2014 Final Report (Phase I): due June 1, 2014
- 12:00 p.m. Closing Remarks



## Appendix 2

W81XWH-10-2-0057 28

### ATTACHMENT A



OFFICE OF THE PRESIDENT  
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WWW.MUSCEDU

**SE VIEW Annual Retreat  
Colcock Hall Board Room  
Friday, January 24, 2014, 9:00 a.m. – 3:00 p.m.  
Agenda**

- 9:00 a.m. Greetings
- 9:05 a.m. Introductions
- 9:30 a.m. Capacity building: co-investigators share brief program updates, SE VIEW related "wins" and sustainability efforts (maximum of 5 minutes per co-investigator)
- 11:00 a.m. TATRC Briefing
  - Wilbur Malloy, MA, MLS (Program Manager/Medical Laboratory Scientist)
- 12:00 p.m. Lunch
- 1:00 p.m. Evaluation Plan (Jennifer Friday, PhD)
- 2:00 p.m. Administrative Core
- 3:00 p.m. Closing Remarks



## Appendix 3



Office of the President ☐  
 COLCOCK HALL  
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 CHARLESTON, SC 29425-0010  
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 WWW.MUSC.EDU

SE VIEW Executive Committee Meeting  
 ART Auditorium, #1119  
 Thursday, March 20, 2014, 8:30 a.m. - 12:00 p.m.  
 Agenda

- 8:30 a.m. Greetings and Introductions
- 8:40 a.m. Capacity building: co-investigators share brief updates, SE VIEW related “wins” and sustainability efforts (**maximum of 3 minutes per co-investigator**)
- 10:00 a.m. BREAK
- 10:15 am Administrative Core
- 12:00 p.m. Closing Remarks



## Appendix 4



OFFICE OF THE PRESIDENT  
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WWW.MUSC.EDU

SE VIEW Executive Committee Meeting  
Colcock Hall Board Room  
Friday, June 13, 2014  
Agenda

- 8:30 a.m. Greetings and Capacity Building: co-investigators share brief updates, SE VIEW related “wins” and sustainability efforts (**maximum of 3 minutes per co-investigator**)
- 10:00 a.m. BREAK
- 10:15 a.m. Administrative Core
- 11:00 a.m. Phase 1 Projects: unique/funniest moments, biggest surprises and lessons learned
- 12:00 p.m. Closing Remarks

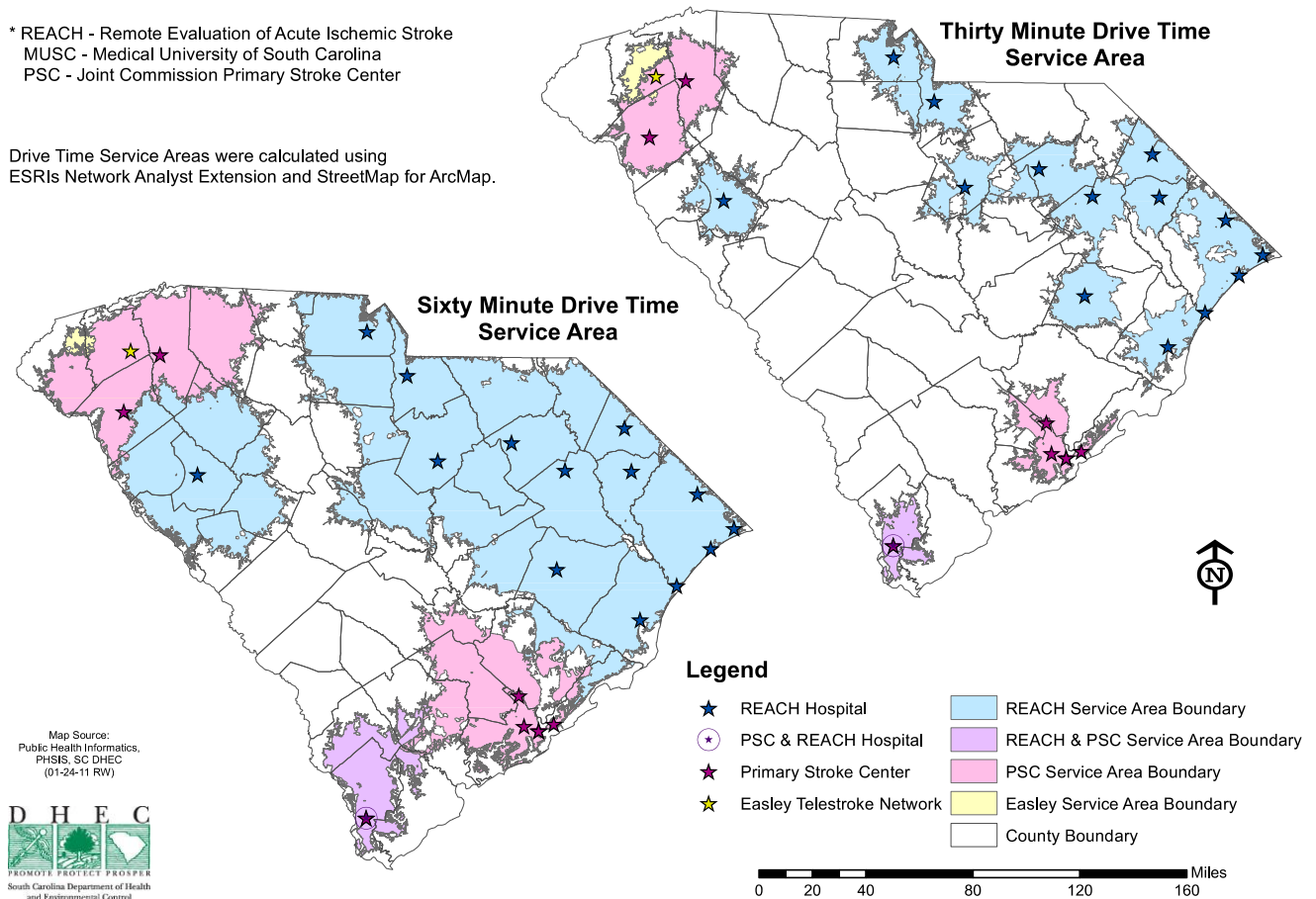


## Appendix 5

### Primary Stroke Centers and REACH MUSC\* Stroke Network Population Served by PSC\* and REACH Hospitals

\* REACH - Remote Evaluation of Acute Ischemic Stroke  
MUSC - Medical University of South Carolina  
PSC - Joint Commission Primary Stroke Center

Drive Time Service Areas were calculated using  
ESRIs Network Analyst Extension and StreetMap for ArcMap.

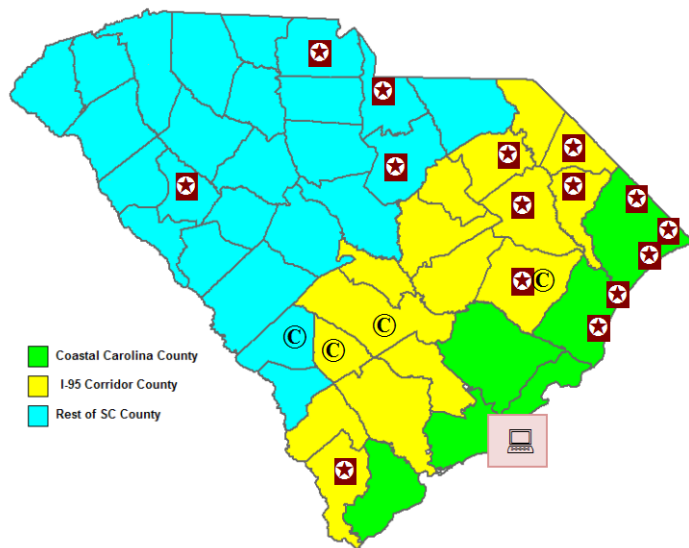


## Appendix 6

Update: 9/18/2011

**REACH MUSC Telestroke Site Map by SE VIEW Region**

County	Region	Tele-Medicine Sites
BEAUFORT	Coastal Carolina	-
BERKELEY	Coastal Carolina	-
CHARLESTON	Coastal Carolina	<b>Hub</b>
GEORGETOWN	Coastal Carolina	<b>R(2)</b>
HORRY	Coastal Carolina	<b>R(3)</b>
BAMBERG	I-95 Corridor	<b>C</b>
CALHOUN	I-95 Corridor	-
CLARENDON	I-95 Corridor	-
COLLETON	I-95 Corridor	-
DARLINGTON	I-95 Corridor	<b>R</b>
DILLON	I-95 Corridor	<b>R</b>
DORCHESTER	I-95 Corridor	-
FLORENCE	I-95 Corridor	<b>R</b>
HAMPTON	I-95 Corridor	-
JASPER	I-95 Corridor	<b>R</b>
LEE	I-95 Corridor	-
MARION	I-95 Corridor	<b>R</b>
MARLBORO	I-95 Corridor	-
ORANGEBURG	I-95 Corridor	<b>C</b>
SUMTER	I-95 Corridor	-
WILLIAMSBURG	I-95 Corridor	<b>R,C</b>
ABBEVILLE	Rest of SC	
AIKEN	Rest of SC	
ALLENDALE	Rest of SC	
ANDERSON	Rest of SC	
BARNWELL	Rest of SC	<b>C</b>
CHEROKEE	Rest of SC	
CHESTER	Rest of SC	
CHESTERFIELD	Rest of SC	
EDGEFIELD	Rest of SC	
FAIRFIELD	Rest of SC	
GREENVILLE	Rest of SC	
GREENWOOD	Rest of SC	<b>R</b>
KERSHAW	Rest of SC	<b>R</b>
LANCASTER	Rest of SC	<b>R</b>
LAURENS	Rest of SC	
LEXINGTON	Rest of SC	
MCCORMICK	Rest of SC	
NEWBERRY	Rest of SC	
OCONEE	Rest of SC	
PICKENS	Rest of SC	
RICHLAND	Rest of SC	
SALUDA	Rest of SC	
SPARTANBURG	Rest of SC	
UNION	Rest of SC	
YORK	Rest of SC	<b>R</b>

**SC SE VIEW Regions**

MUSC Telemedicine Sites  
**REACH MUSC and  
 CREST Programs**

= Active REACH

= Pending REACH

= CREST

## Appendix 7



REACH-MUSC Hospital Partners (Spokes)				VOLUMES			PERCENTAGES		HOSPITAL INFO		
Site Name and Location	County	SE VIEW Region	Start Date	Consults	tPA Given	Transport to MUSC	% Presumed Ischemic Stroke Treated with tPA	% Transfer to MUSC	# Hosp. Beds	Annual ED Visits	Distance to MUSC (Miles-)
Georgetown	GEORGETOWN	Coastal	5/1/2008	360	48	123	27%	34%	131	31,990	61
Waccamaw	GEORGETOWN	Coastal	5/6/2008	403	80	131	40%	33%	140	24,000	82
McLeod	FLORENCE	I-95	5/7/2008	546	122	67	43%	12%	453	63,000	133
Grand Strand	HORRY	Coastal	9/1/2008	60	20	45	34%	75%	220	62,000	102
Marion	MARION	I-95	9/18/2008	171	26	69	35%	40%	124	23,885	119
Williamsburg	WILLIAMSBURG	I-95	12/23/2008	168	30	96	37%	57%	25	11,000	74
Coastal Carolina	JASPER	I-95	1/20/2010	253	28	91	31%	36%	45	18,000	88
Piedmont	YORK	Rest of SC	3/26/2010	388	88	15	45%	4%	288	46,000	187
Kershaw	KERSHAW	Rest of SC	5/19/2010	243	25	47	22%	19%	121	24,000	148
McLeod-Dillon	DILLON	I-95	7/29/2010	233	33	53	32%	23%	79	25,000	163
Springs	LANCASTER	Rest of SC	10/26/2010	141	31	27	30%	19%	231	30,000	176
Carolina Pines	DARLINGTON	I-95	1/21/2011	89	15	34	32%	69%	116	33,000	143
Loris Community	HORRY	Coastal	2/28/2011	130	18	29	35%	22%	105	20,000	117
Loris-Seacoast	HORRY	Coastal	2/28/2011	86	5	14	15%	16%	50	20,000	116
Self Regional	GREENWOOD	Rest of SC	3/2/2011	148	35	15	51%	10%	354	40,000	191
TOTALS				3,419	604	856	36%	18%	2,482	471,875	127 Average

□ Self-Report Hospital Data.

⊗ BEDS = General Hospital Beds

~ Source: MapQuest (Fastest Driving Distance in Miles)

⊗ Source: SC DHEC at: <http://www.scdhec.gov/health/licen/hrhptl.pdf>

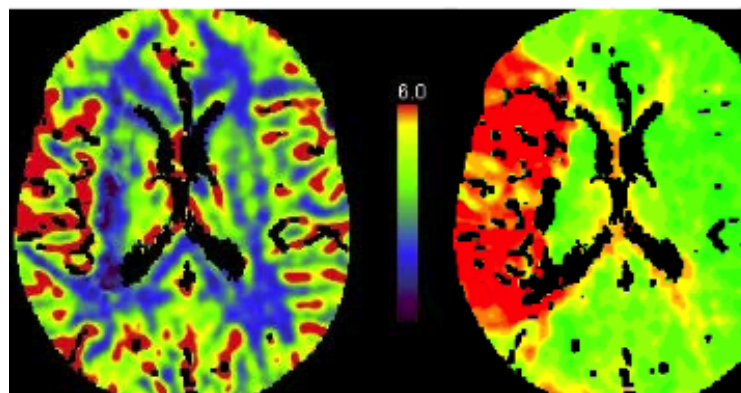


## Appendix 8

## Medical University of South Carolina

# Stroke Quarterly

from the Stroke Research and Education Center



### Spring 2014

#### ■ CONTENTS

- 1 From the Directors' Desks
- 2 Opportunities & Events
- 3 News, Publications & Team
- 4 Tip & Support

#### ■ FROM THE DIRECTORS' DESKS

Dear readers,

Winter is finally over and we are in the midst of planning our spring and summer activities at the Stroke Research and Education Center at MUSC. We have been quite busy this past year and are planning several big projects including hosting some community events.

Last year was full of exciting events and new opportunities for the Stroke Program. We had our first successful MUSC Stroke Awareness event in May. We are looking forward to an even bigger and better event this spring. Our 10th "Strike Out Stroke" event at the Charleston RiverDogs' Stadium had the largest participation since its inception, providing 149 blood pressure screenings and helpful stroke information to the attendees. November's provider education conference, the MUSC Comprehensive Stroke and Cerebrovascular Update, provided the most up-to-date stroke treatment and prevention information to doctors in the community. The conference was very well attended.

In addition to our community events, our research portfolio is growing and each grant application cycle brings new opportunities to grow our center. It also provides new learning opportunities for junior researchers and medical students.

We hope you enjoy reading about our current outreach events and research progress. We look forward to seeing you soon.

Tanya Turan, MD/MSCR  
Director, MUSC Stroke  
Division



Dan Lackland, DrPH  
Director, Stroke Research  
& Education Center



Christine Holmstedt, DO  
Co-Director, Stroke &  
Cerebrovascular  
Medical Team



#### ■ DID YOU KNOW?

Almost 60% of stroke patients don't get to a doctor or hospital until 24 hours after the stroke.

